

American Aviation

The Independent Voice of American Aeronautics

MARCH 15, 1944

NOT TO BE TAKEN

FROM LIBRARY

A U. S. Policy Needed

AS THE time appears to be approaching for international air conferences with other nations of the world, isn't it time to inquire about an international air policy for the United States?

Is the U. S. to be represented internationally by a single chosen instrument? Or a series of regional chosen instruments? Or by as many individual operators as the CAB decides can operate economically along a pattern similar to that in the United States?

Isn't it sound to inquire at this time whether the United States can enter into international conferences without having determined or announced what its own policy shall be? Is it fair to Pan American Airways which has been, in effect, our chosen instrument, not to make a decision in the immediate future? Is it fair to the domestic airlines who have ambitions in the international field not to let them know one way or another as to whether they can fly outside the country?

World events are moving swiftly. There is no time to lose in making decisions—decisions that must be made before this country can go much farther toward a settlement of the world air problems.

If the Administration has determined upon a policy, then why not let it be known?

Certainly if the United States sits down at a conference table with Great Britain, Canada, Russia and China, it cannot go very far in discussing international collaboration without revealing whether or not we have a policy, and, we do have one, what that policy is. The time is fast approaching when there will be a surplus of transport

(Turn to page 9)



Gets Important Route

G. T. "Ted" Baker, president of National Airlines, which has been awarded a Jacksonville-New York route, one of the longest extensions to the domestic airline system ever granted by CAB.

Late Bulletins

Airline Pilots Called

Authoritative sources in the War Dept. told *American Aviation* on Mar. 9 that approximately 30 more air transport pilots holding reserve commissions will be called to active duty in the near future and will be assigned to "emergency war jobs." The War Dept. has notified the airlines of the need for additional pilots trained and experienced in the handling of transport planes.

ALPA Opposes

David L. Behncke, president of the Air Line Pilots Association, stated Mar. 9 that ALPA definitely will oppose the proposal to increase the take-off and landing weight of certain specific types of transport planes. Hearing is set for Mar. 15.

Draft Relief: To establish some sort of industrial draft deferment—which would be of special aid to the aircraft industry—Army and Navy have been considering several plans. It was anticipated last week that an Army and Navy industrial deferment review board would be set up, with regional boards in various states particularly near key war production centers, which would pass

on the urgency of deferment requests. This was seen as providing an opportunity for plane manufacturers to keep some of their badly needed skilled men. Selective Service Director Hershey sent out a telegram to all draft boards requesting them to continue to recognize the replacement schedules set up for essential workers. The President's recent memorandum calling for review of all deferments was silent on this point. The double certification system (requiring certification of workers' essentiality by both the manufacturer and the Army) has been ended.

*Trend of
The News*

Legal Question: One of the recommendations in the recent CAB examiners' report on feeder-pickup service was that air mail pay for that service be limited to a maximum of 25c per mile. However, CAB higher-ups aren't so sure it can be accomplished that easily. They are studying the legal angles, and there is serious question whether mail pay limitation can be effected under the terms of the Civil Aeronautics Act, which states that the "need" of a carrier must be considered in setting mail rates. The question of mail pay limitation may become more important as the feeder-pickup situation crystallizes.

Shift to CAB: An announcement was expected as this issue went to press revealing that the Civil Aeronautics Board is to have charge of deciding which airlines will get airplanes returned by the Army. The Board will also have the final decision on schedules. In the past, the Army had final jurisdiction over return of planes, and also over schedules, with Lt. Col. Francis Butler in charge. Now, it is said, the Army will inform the CAB when planes are available, and CAB will decide which airlines get them. The change meets with the hearty approval of airline officials, who have not been too happy under the former arrangement.

(Turn to page 6)

20c

arinal
search
wholly
a pos-
ture
greatly
of

1. Va.
Louis-
500,000
y \$1.

Wash.
ington
500,000
\$21.

addi-
, at t
com-

ditions
a com-
itment

P., for
irbank,
120,000,
\$370.

Aircraft
engine
in air-
flowing
1 engi-
vibrat-
Layout
Tech-
est en-
, Sheet
work-
workers
write
11, ex-

T

rmance
Act.

MAPS

324

4

tion
own
day
ood-
ders.

PS

944



PUTTING A CRIMP IN PRODUCTION...SPEEDED THINGS UP

Sounds impossible, doesn't it—but it's literally true. Here's why. Many of the structural members of an airframe are stamped out of lightweight metal, and then "crimped" or "flanged" in the shape of an elongated letter C.

This operation gives greater rigidity and strength to structural members and also provides a rounded edge which protects the fabric covered surfaces from injury which sharp edges might cause. Anything which speeds up this "crimping" operation, speeds up production.

At McDonnell, a member of our organization, has developed a "C" Flanging Machine, which, with

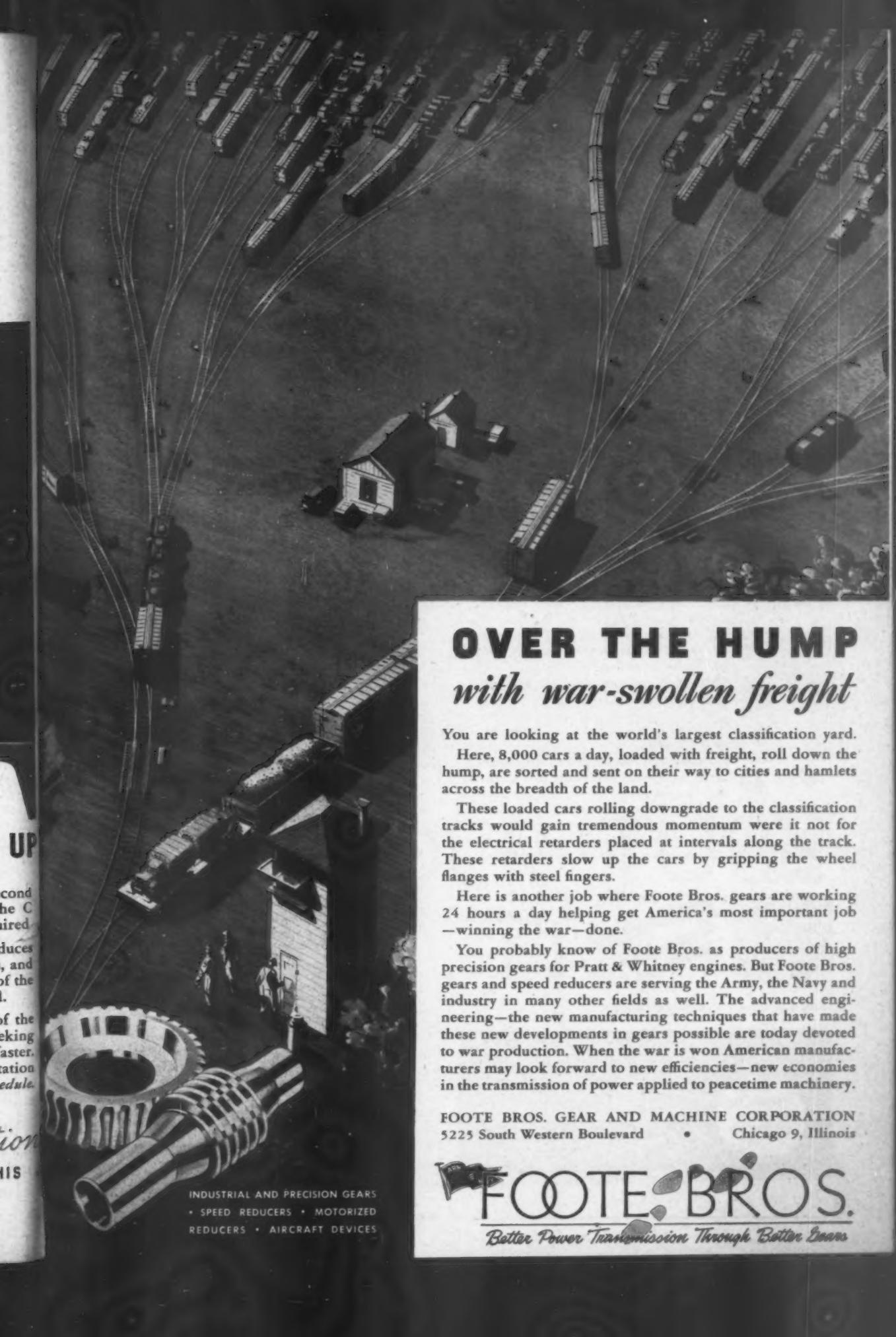
a wiping and rolling action, performs the second forming operation necessary to complete the C flange, in less than half the time formerly required.

In addition to saving time, the machine produces a more uniform flange free from nicks, dents, and irregularities—and saves the operator much of the fatigue which this operation formerly caused.

This development is another indication of the active interest taken by our personnel, in seeking new ways to perform their tasks better and faster. It's one more reason for McDonnell's reputation for meeting production requirements *on schedule*.

MCDONNELL Aircraft Corporation

Manufacturers of PLANES • PARTS • PLASTICS • SAINT LOUIS - MEMPHIS



OVER THE HUMP *with war-swollen freight*

You are looking at the world's largest classification yard.

Here, 8,000 cars a day, loaded with freight, roll down the hump, are sorted and sent on their way to cities and hamlets across the breadth of the land.

These loaded cars rolling downgrade to the classification tracks would gain tremendous momentum were it not for the electrical retarders placed at intervals along the track. These retarders slow up the cars by gripping the wheel flanges with steel fingers.

Here is another job where Foote Bros. gears are working 24 hours a day helping get America's most important job —winning the war—done.

You probably know of Foote Bros. as producers of high precision gears for Pratt & Whitney engines. But Foote Bros. gears and speed reducers are serving the Army, the Navy and industry in many other fields as well. The advanced engineering—the new manufacturing techniques that have made these new developments in gears possible are today devoted to war production. When the war is won American manufacturers may look forward to new efficiencies—new economies in the transmission of power applied to peacetime machinery.

FOOTE BROS. GEAR AND MACHINE CORPORATION
5225 South Western Boulevard • Chicago 9, Illinois



FOOTE BROS.
Better Power Transmission Through Better Gears

INDUSTRIAL AND PRECISION GEARS
• SPEED REDUCERS • MOTORIZED
REDUCERS • AIRCRAFT DEVICES



**With Dependable Communications
Keeping Our Fliers in Constant
Touch with Each Other**

• Their bases somewhere in England . . . their escort fighter planes . . . their own crew members . . . all are within momentary reach of our bomber pilots over Europe. On this and every other fighting front, dependable communication facilities are minimizing our fliers' dangers and hastening our enemies' defeat.

The Kellogg products shown here—along with microphones, telephone and telegraph sets, cord assemblies, etc.—are but a few of the many Kellogg items chosen for military service. Products of a company that has specialized in the manufacture of fine communication equipment for nearly half a century, they measure up to highest performance standards. The same research and engineering facilities, the same methods which produced these products, are at your service on any problem involving communication equipment.

Head and Chest Sets



Volume Controls



Multi-contact
Plugs and Sockets



Radio Noise Filters



Retractable Electrical
Roled Kards



**KELLOGG
SWITCHBOARD
& SUPPLY CO.
6650 SO. CICERO AVENUE
CHICAGO 38, ILLINOIS**



American Aviation

Vol. 7 No. 20

March 15, 1944

International Air Conference Nears	17
Senators Approve Conferences	19
Truman Praises Industry	20
'41 Export Figures Released	22
82 WTS Schools Continued	24
Caution Urged on Air Cargo	27
Objections to Feeder Report Filed	42

The Independent Voice of American Aeronautics

Published the 1st and 15th of each month by American Aviation Associates, Inc., American Building, 1317 F Street, N.W., Washington, 4, D.C. Printed at The Telegraph Press, Cameron and Kelker Sts., Harrisburg, Pa. Entered as second class matter at Washington, D.C. and Harrisburg, Pa.

WAYNE W. PARRISH, EDITOR AND PUBLISHER
ERIC BRAMLEY, EXECUTIVE EDITOR
THOMAS E. LINDSEY, BUSINESS MANAGER

DEPARTMENT EDITORS: Katherine E. Johnsen (Congress); Conrad Campbell (Manufacturing); E. J. Foley (Equipment); Peggy Guetter (West Coast); Clifford Guest (Special Assignments); Barbara B. C. McNamee (War Agencies); William Thompson (Production Editor and Staff Photographer); Gerard B. Dobben (Transport).



REGIONAL REPRESENTATIVES:

Miss Peggy A. Guetter, West Coast Representative, Room 1404, Park Central Bldg., 412 West Sixth St., Los Angeles, 14, Cal. Telephone: Vandike 2880.
Harry W. Brown, Midwestern Advertising Manager, 322 Briar Place, Chicago, 14, Ill. Telephone: Lakeview 6704.
O. R. Elofson, Eastern Advertising Manager, 2207 RKO Bldg., 1270 Sixth Avenue, New York, 20, N.Y. Telephone: Circle 6-9446.

J. Forecast, British Representative, Edwin Greenwood Ltd., Strand, W.C.2, Thanet House, London, England.

PUBLISHING CORPORATION: American Aviation Associates, Inc. Wayne W. Parrish, President; Col. Albert H. Stackpole, Vice-President (in active military service); Eric Bramley, Vice-President; Brig. Gen. E. J. Stackpole, Jr., Treasurer (in active military service); Thomas E. Lindsey, Sec'y. AMERICAN AVIATION: Subscription rates for U.S., Mexico, Central and South American countries—\$3 for 1 year; \$4 for 2 years; \$5 for 3 years. Canada—\$3.50 for 1 year; \$3.50 for 3 years. All other countries—\$4.50 for 1 year; \$9.50 for 3 years.

AMERICAN AVIATION DAILY: Published six days each week except holidays; dispatched by air mail. \$15 per month; \$85 for six months; \$170 per year. Group company rates on request. Service Bureau available to all subscribers. CLIFFORD GUEST, Managing Editor.

AMERICAN AVIATION DIRECTORY: Published twice a year, spring and fall. Complete reference data on administrative and operating personnel of airlines, manufacturers, accessories firms and their products, organizations, schools and local operators, Federal and state government agencies concerned with aviation. Single copy, \$5; Annual subscriptions, \$7.50. Discounts on quantity orders. Next edition scheduled for April. HELEN L. WALSH, Managing Editor.

UNIVERSAL AIRLINE SCHEDULES: Published and revised monthly at 139 North Clark Street, Chicago, 2, Ill. (Telephone: State 2154). Complete airline schedules, fares, and travel information, including international air transportation. Subscription rates: \$3.00 per year. Airline rates on request. H. D. WHITNEY, Managing Editor.

1944

17
19
20
22
24
27
42

merican
Street.
Pres.
as sec-
burg, Pa.

; Con-
ment);
Assign-
William
apher);

Room
k. Los
er, \$2
w 6704.
RKO
Tele-

enwood
ngland.
g, Inc.
ckpole.
ramley.
reasurer
Sec'y.
Mexico.
ear; \$4
year;
l year.

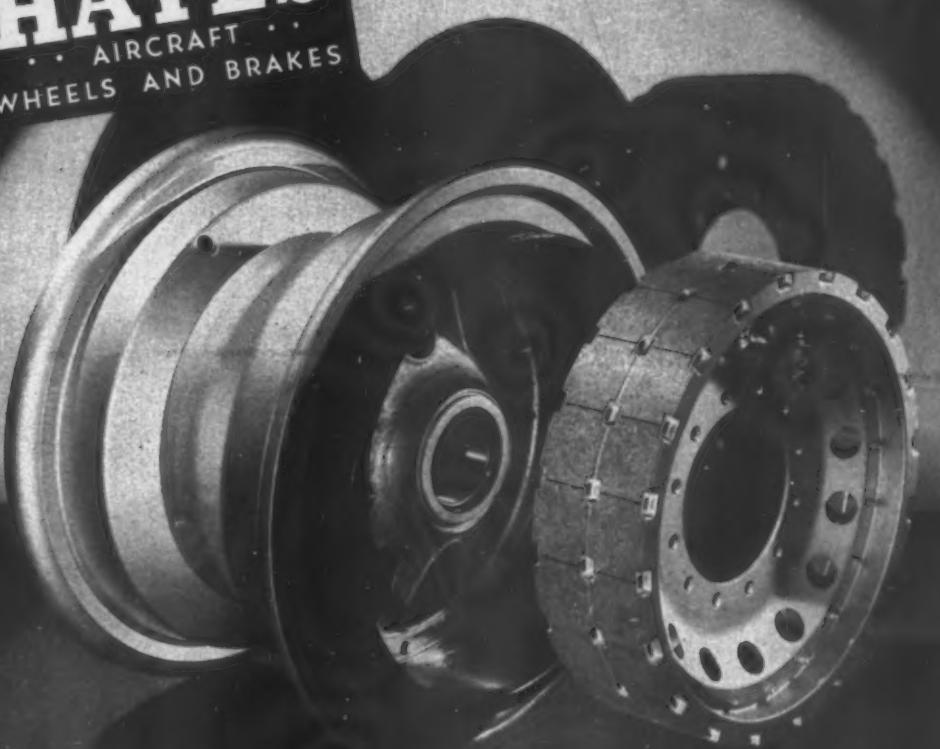
week
month;
y rates
cribers

spring
ve and
memories
d local
s com-
ber's
dition
Editor
monthly
phone:
travel
rtation
on re-



HAYES

... AIRCRAFT ...
WHEELS AND BRAKES



WHEN YOU SAY

EXPANDER TUBE BRAKES

YOU SAY

HAYES

"HAYES" is the name you find on Expander Tube Brakes, in rugged, readily-maintained service around the world today: On every 4-engine U. S. bomber —as on Piper Cubs, and on thousands in-between: trainers, transports, fighters and bombers. And standard equipment on airliners too: Eastern, Penn Central, United and Western.

For pilots and ground crews alike, for the men who have to live with the equipment, our research, design and test carries on every day.

Western Representative: Airsupply Co., 3959 W. 3rd St., Los Angeles

HAYES INDUSTRIES, INC.

Home Office: JACKSON, MICHIGAN, U. S. A.



The New Boeing Flying Fortress is equipped with **WITTEK Aviation Hose Clamps**

The new Boeing B-17G Flying Fortress with its increased fire power will add to the distinguished achievements of its predecessors. All members of the famous B-17 Series, including the B-17G, are equipped with Wittek Aviation Hose Clamps. Today as in the past, Wittek Aviation Hose Clamps, known as the standard of the industry, are being used by the nation's leading military aircraft and engine builders. Wittek Manufacturing Co., Chicago 23, Illinois.



WITTEK  *Aviation*
HOSE CLAMPS

Trends

(Continued from page 1)

Kaiser-Hughes: Since cancellation of the Kaiser-Hughes plywood plane project, it has now developed that if the giant K-H plane is to be made of metal, as recommended by WPA it will be necessary for them to enter into a contract with the Army or the Navy for the plane. This means that before a contract can be granted, a definite war need will have to be shown. The plywood plane contract was with Defense Supplies Corp.

Airframe Panel: Instead of setting up an independent unit for the purpose, aircraft manufacturers have decided to place activity in connection with the War Labor Board airframe panel under the wing of the Aeronautical Chamber of Commerce. The industry is still looking for two aircraft men to serve full time on the panel work, however.

Big Plans: National Aeronautic Association, which this week announces its overall national program, has some big plans under consideration. Among other things, it is thinking over the feasibility of sponsoring a "global flying forum" to help formulate the association's policy with respect to world-wide aviation. NAA also is considering taking over the Inter-American Escadrille activities which recently have been under the direction of Nelson Rockefeller, Coordinator of Inter-American Affairs.

Hiring Veterans: Aircraft manufacturers have been among the leaders in developing workable methods of utilizing the services of veterans of the current war discharged because of injuries. The East Coast Aircraft War Production Council has been engaged in formulating a standard policy on this question which will be of interest to all manufacturers when announced.

New Planes: Information on a number of the new aircraft models was made public during the past fortnight, but other new models are still under censorship wraps. Among the announcements were: The FTF two-engine fighter plane being built for the Navy by Grumman, the first multi-engine fighter for the Navy, and the Douglas BDT dive bomber which is replacing the Dauntless, both discussed for the first time in the annual Truman Committee report. Truman also had the following to say of the Budd RB-1: "It was originally designed as a combination passenger and cargo plane for operation under conditions prevailing in the Latin Americas. Comparable in size to the Skytrain, it is of stainless steel, all welded construction, and is scheduled to be in production in the very near future." Curtiss-Wright Corp. announced it is in production on an improved version of the P-40 Warhawk, known as the P-40N, with a speed over 350 mph, ceiling of 30,000 feet and range of approximately 1,000 miles. Ford Motor Co. announced receipt of a \$17,000,000 contract for CG-13 Waco cargo gliders with room for approximately 40 fully equipped soldiers. At Kansas City a new series of B-25 Mitchell bombers started down the assembly lines of the North American Aviation plant.

Warner Dissents: Surface carriers, particularly bus lines, won some comfort from a recent split decision of CAB when Edward P. Warner, the Board's vice chairman, wrote a strong dissenting opinion against granting TWA permission to stop at Morgantown, W. Va. Warner contended the Board should not grant additional stops on transcontinental routes until it had adopted a policy based on the testimony and recommendations attending the Local-Feeder-Pickup investigation held last fall.

-Hughes
the giant
by WPI,
with the
before
are to be
Supplies

dependent
decided to
airframe
commerce
serve full

which this
big plans
ing over
to help
world-wide
-Ameri-
under the
American

has been
utilizing
cause of
council has
question
announced

new air-
ight, but
among the
one being
the fighter
which is re-
in the
the fol-
designed as
an under-
able in
construction
very near
production
as the
feet and
announced
the glider
ers. At
ed down
it.

ly bus
of CAP
wrote a
mission to
Board
ates un-
recom-
rtigation



View of General Metal Products Division of The General Tire & Rubber Co., Tail Wheel section sections in foreground. A worker is machining sections in background.

General Tire goes all the way TO GIVE YOU GENERAL'S FAMOUS TOP-QUALITY

in Tail Wheels, Brakes and
Main Landing Gear Wheels



Every finished tail wheel section is carefully inspected and checked and re-checked to make certain it meets rigid quality standards.

Not only in tires and tubes but in the actual fabrication of wheels and brakes, as well, General Tire sees to it that the *Quality* is there. In its own metal products division, tail wheels, brakes and main landing gear wheels are built to rigid General Tire Top-Quality standards and up to A. A. F. specifications. In design—in manufacture—in service—General's products have proved their superiority. When you buy from General you are buying from the source that is known 'round the world for quality and safety—because the performance is there.



AVIATION DIVISION
THE GENERAL TIRE & RUBBER CO., AKRON, OHIO

Phillips

first

largest

Phillips
AVIATION GASOLINE

THE PHILLIPS PETROLEUM COMPANY, LAWRENCE, KAN.
Sole Distributor of AvGas to the Air Mail Carriers



(Continued from page 1)

planes—planes no longer needed by the military. But there is yet to be set up a system by which those planes can be made available to U. S. operators. Under Presidential directive the domestic airlines are limited to 200 transport planes. Until that directive is altered the Army cannot return to or give to the airlines any more airplanes, or at least not more than nine to bring the present fleet total to 200.

Yet the lend lease airplanes which we have given to other countries can be utilized by those countries for transport purposes immediately that their military usage is over. It is an ironical situation indeed, that we have supplied the world with transport planes, but restrict the number for use by our own airlines, and have not set up a system for the granting or selling of surplus planes to our own people.

There has been far too much secrecy about America's postwar position in global flying. Some of this secrecy, we suppose, is necessary for diplomatic reasons. But much of it is unnecessary. Isn't it time for a forthright statement of policy—if we have one—so that the American people at least know where the Administration stands?

Working Together

OUTSIDERS often get the impression that the airlines do nothing but squabble among themselves. They forget that differences of opinion on national policy and fighting for new air routes are healthy indications of a healthy industry, and that when the airlines have common problems pertaining to the industry as a whole they fall in line with splendid harmony.

Recently it was suggested by someone that the airlines had better get together on an industry policy or the industry would fall apart. As a matter of fact there is a very strong unanimity of opinion within the industry on virtually all industry problems. There is no real question about how the airlines stand with regard to the railroads and buses entering air transportation. There is no question of harmony within the Air Transport Association. They may battle in CAB hearings over certain air routes, and small operators may battle the majors, or vice versa, but when it comes to sitting down at a table to agree on matters of common interest the spirit of cooperation and harmony is present very strongly.

Prophet Braniff

WHEN a new decade turned the corner in 1940, Tom E. Braniff, president of Braniff airways, said this new span of ten years would be known as the "Flying Forties." A former airline man, K. K. Schopp, of St. Louis, has written to us reminding us of the Braniff prophecy and suggesting that proper recognition be given to the coined of the phrase.

It hardly seems possible that it was more than four years ago that we wrote an editorial commending Mr.

Braniff for the phrase and predicting that his prophecy would come true. The strides made in aviation in the past four years are of almost unbelievable magnitude. Oceans have been conquered, huge quantities of war cargo are being transported, airplane production has exceeded even the dreams of 1939, and two million men, more or less, are in our Army Air Forces. Commercial air transport has taken a back seat but only temporarily. We are truly in "The Flying Forties."

Common Sense on Airports

THE OTHER day we happened to cut in on some interesting correspondence passing between astute Hugh Robbins of Waco Aircraft and the sales manager of another airplane manufacturer. Robbins was dealing out some good sound common sense on the subject of landing strips in the postwar.

American citizens and taxpayers have built for themselves thousands of highways and streets and placed markers along same so that we could navigate our automobiles with ease and security, he pointed out. In so doing the automobile became almost part of our lives. In the building of this highway network we made it possible for free enterprise in the form of automotive service to build and operate facilities adjacent to our streets and highways. The people who built these facilities naturally contributed much to the commerce of our country which in turn helped to raise our standard of living.

"So let us all push for airports or landing strips at least every ten miles in this man's country so that no city, town, hamlet, hunting spot, fishing spot, or farm will be over five miles distant from a place to land," Robbins said. "Let there be visual markers on every one of these landing strips or airports. Understand, these are to be additional navigation aids to those we already have in the form of radios. Let's be sure that each one of these landing strips and airports are so set up that free enterprise may have a chance to develop adjacent thereto. Then everyone will have an excuse at least to own a private airplane, which in turn means business for millions of people, directly and indirectly."

The Crystal Ball

CAA Administrator Charles Stanton has been predicting 500,000 civil, commercial and military airplanes will be flying in the U. S. by 1950. L. L. Schroeder, commissioner of aeronautics for Minnesota, projected Stanton's estimates into Minnesota's logical proportion and he discovers that if Stanton is reading the light in the crystal globe clearly, his state will have 4,166 airplanes in 1950 and will need 155 new hangars with an estimated floor area of 2,189,660 square feet and costing approximately \$2,806,400. Here is one indication that post war aviation business may be booming.

WAYNE W. PARRISH

March 4, 1944

To the Editor:

It's a bit late to write concerning an item in the January 1 issue but between one thing and another, time marches by, but fast.

I make reference to the article on page 26 entitled "Unused Transports." The unnamed author says in part, "These four airplanes in themselves were enough to start a small airline." I'd like to take issue with the author; I can't quite agree on the term "small airline" in relation to your DC-3's. Checking *Universal Airline Schedules* you will find that X Airline is at present operating 1402 route miles. This represents three round trips daily. At the present time and for several months past this system has been operating with four DC-3's. I can name several other carriers in the U.S. that have been operating extensive systems with but three airplanes—perhaps our author really meant to say, "These four planes would form a fleet for practically any regional carrier in the U.S."

V. B. W.

New York, N. Y.

To the Editor:

In a recent issue of *American Aviation* there was published an analysis of the surplus aircraft question which was touched upon during the Oklahoma City Aviation Clinic. While you state that aviation's problem No. 1 is to get the handling of airplanes separated from other surplus war materials after the war, I would like to go a step farther and say that surplus aircraft represents aviation's No. 1 problem at the present time. To arrive at this conclusion you have only to give a little thought

Letters

to the economic effect upon the aviation business in general of the improper distribution of surplus aircraft immediately following the cessation of hostilities. There is hardly an individual, much less a corporation, in the aviation business today that will not be affected one way or another by the ultimate manner in which this matter will be handled.

There is one thought in this connection that I do not remember of having seen mentioned anywhere and which could have a vital bearing on this whole problem. You will probably recall that after the last war many of the Air Corps' pilots remained in the Reserve. I was one of them. I was quite anxious to keep flying and, living at that time in Central Illinois, the nearest Army Air Base was at Chanute Field, Rantoul, Illinois, some 120 miles from where I lived. As I recall it, at that time there was one PT trainer with a Hisco motor available for Reserve flying and in order to get any time on this ship at all, it was necessary that you make a reservation some two or three weeks in advance and then you were only permitted to fly it around the airfield and a week-end cross-country trip was something that we used to dream about but never could realize. The result was that many of these Reserve flyers became discouraged and gave up all thoughts of continued time on service-type aircraft.

I am sure that the Air Corps, this time,

will not let such a thing occur again. With the hundreds of Army Air Bases scattered throughout the country and with the thousands or tens of thousands of pilots returning after the war, it should be a comparatively simple matter for the Air Force to keep these boys in flying trim by supplying these many air bases with a sufficient quantity of every type of equipment now currently in use. This would have the effect of keeping interest alive in flying as well as keeping our Reserve pilots in flying and fighting trim. An ample distribution of surplus aircraft in this manner would, as you can readily see, absorb a tremendous number of so-called surplus aircraft.

A plan of this sort, however, is not without a bad effect upon the aviation business in general. Private airplane manufacturers are counting to a very large degree upon returning pilots as potential purchasers of their products. If P-38's and P-47's are scattered generously throughout the country within an hour or two drive of every reserve pilot, how many of these boys are going to want to invest their own money in a private ship, paying its operating expense and hangar rent out of their own pockets when by driving maybe 50 miles they will have available to them their real love, a P-38 or P-47 which they can fly as much as they want on cross-country or week-ends at government expense. I am wondering if sufficient thought has been given to this idea and the implications which it contains. I know you have given a great deal of study to this surplus problem and I would appreciate very much your candid reaction to the thoughts mentioned above.

JAMES R. GRAHAM
United States Aviation Underwriter

Books

AIR NAVIGATION FOR BEGINNERS, by Lieut. Comdr. (Ret.) Scott G. Lamb, B. S., M. S. Norman W. Henley Publishing Co., 17 West 45th Street, New York, N. Y. 101 pages. \$1.50. Second Edition Revised.

Comdr. Lamb has written this book, in simple language, "to provide an introduction to air navigation for many thousands of young women and men who are eager to learn something about model planes, and kindred subjects concerned with aviation."

Included are chapters on latitude and longitude, measurement of position, direction of the earth, distance, direction and distance instruments and their uses, maps and charts, piloting and radio bearings, dead reckoning and the wind triangle, wind triangle applications, radio range system, flight instruments and corrections, celestial navigation, and time.

THE BIRTH OF THE ROYAL AIR FORCE, by Air Commodore J. A. Chamier. Sir Isaac Pitman & Sons, Ltd., London. 200 pp. \$6.00

The official history of the R.A.F. was written many years ago in six volumes. On reading it, Air Commodore Chamier decided that it was suitable only for serious students of war, that a simpler version should be produced. This is such a version. It traces the development of the tasks given the R.A.F. and underscores lessons which might be drawn from 1914-1918.

AIR NAVIGATION, by P. V. H. Weems. McGraw-Hill Book Co., New York. 359 pages and appendices. \$4.50.

This is the third edition of Lt. Comdr. (Retired) Weems' book surveying the principal methods of air navigation—piloting, dead reckoning, radio position finding and celestial navigation. Comdr. Weems' reputation in the field of air navigation is well known, and his books are well written and clearly explained.

SPHEROGRAPHICAL NAVIGATION, by Dirk Brouwer, Frederic Kestor, and D. A. McMullen. The Macmillan Company. 200 pp. \$5.00

Two Yale professors and a Yale graduate, who is now a business man and engineer in Brazil, have collaborated on this manual of instruction on a system of celestial navigation

embodying the use of a spherical plotting surface on which a fix of position is obtained by the direct plotting of the altitudes of selected celestial bodies. The authors stress the fact that the Spherographical System gives directly and visually the latitude and longitude of the observer, by the simple plotting of observed altitudes on the sphere, and is not one more means of solving the spherical triangle for calculated altitudes.

THE LADY AND THE TIGERS. By Olga S. Greenlaw. Illustrated. 317 pages. E. P. Dutton & Co. New York. \$3.00.

In a breezy lingo, Olga S. Greenlaw tells the story of the successes and defeats, the hard knocks and laughter of the Flying Tiger crews in the Chennault campaign on the Burma Road. With her husband she accompanied the American Volunteer Group to the line of action as recorder, and (what turned out to be her greatest contribution) morale-booster. The reader will find action to the full, personalized stories of grim fighters, and the earthy language of people facing constant danger, who can talk themselves out of anything.

Most noteworthy sketches in the book are the visits of Generalissimo and Madame Chiang Kai-Shek, the comings and goings of writers and scattered descriptions of the flier's emotions.

E. B. H.

AIRCRAFT SHEET METAL WORK, by C. A. LeMaster. American Technical Society, Chicago, Ill. 387 pages.

This book is planned to serve as a basic course of instruction for apprentices and other students of aircraft sheet metal work and as a refresher for mechanics who are more or less experienced in the work of this trade. The author is a member of United Air Lines' supervisory staff.

LAST FLIGHT FROM SINGAPORE, by Arthur G. Donahue, D.F.C., Flight Lieut., R.A.F. The Macmillan Company. 168 pp. \$2.50. (Illustrated.)

The manuscript of this book and all photographs in it were found among the effects of the author, who is presumed to have been killed in September, 1942. He was an American who fought with the R.A.F. for two years. The book does a fine job of giving the fighter pilot's perspective. Donahue was the author of "Tally-Ho! Yankee in a Spitfire."

Obituaries

George H. Grayson

George H. Grayson, 66, director of International Postal Service for the Post Office Dept., died Feb. 28 following a heart attack. Grayson, who handled all foreign air mail matters for the Post Office, was well known in aviation circles. He was a veteran of 46 years service with the Department.

Born at Nealsville, N. C., on July 31, 1877, Grayson joined the Post Office on Oct. 25, 1897, serving as an assistant railway mail clerk until Sept. 15, 1902, when he was transferred to the office of the Second Assistant Postmaster General as a clerk. He served as a clerk both in the office of the Second Assistant and the Fourth Assistant until July 16, 1918, when he was named assistant superintendent of the Division of Railway Adjustments.

On Mar. 1, 1929, Grayson was appointed assistant director of International Postal Service, serving in that capacity until Dec. 24, 1942, when he was named director.

CURTISS-WRIGHT TECHNICAL INSTITUTE
GRADUATES ARE

Trained Men

YOU CAN DEPEND UPON

The objective of this school is to train students to the highest degree of technical perfection; to graduate men you can trust, with full confidence in their ability to meet the exacting requirements of the Aircraft Industry, C. A. A. and the Army Air Forces.

Established in 1929, Curtiss-Wright Technical Institute has trained thousands of men, both military and civilian, and will continue to do so in the future; with its unsurpassed training organization, up-to-the-minute equipment, and modern facilities.

CURTISS
TECHNICAL WRIGHT
INSTITUTE

MAJOR C. C. MOSELEY, PRESIDENT AND FOUNDER

GRAND CENTRAL AIR TERMINAL

GLENDALE 1, (LOS ANGELES CO.) CALIF.

BUY
MORE
BONDS

CURTISS-WRIGHT TECHNICAL INSTITUTE...BEFORE THE WAR - DURING THE WAR - AFTER THE WAR

Wings

FOR THE WORLD'S GREATEST TRAVEL SYSTEM



For over half a century the history of Canadian Pacific has been one of progress and development. First came the railway, spanning Canada . . . and great ships plying the broad Pacific . . . to China . . . the Orient . . . Australasia . . . then other ships on the Atlantic linking Europe and North America by the short northern route.

Now, this world-girdling travel system has wings! Dedicated today to speeding aerial war traffic, training air force personnel and servicing R.C.A.F. planes . . . Canadian Pacific Air Lines will be ready to serve peace-time needs when victory is won.

ROUTES FLOWN by C.P.A.
MONTREAL - QUEBEC - SAGUENAY
NORTHERN QUEBEC - LABRADOR
NORTHWESTERN ONTARIO
THE PRAIRIE PROVINCES
BRITISH COLUMBIA
YUKON and N.W. TERRITORIES
VANCOUVER - VICTORIA

Canadian Pacific
AIR LINES

HEAD OFFICE MONTREAL



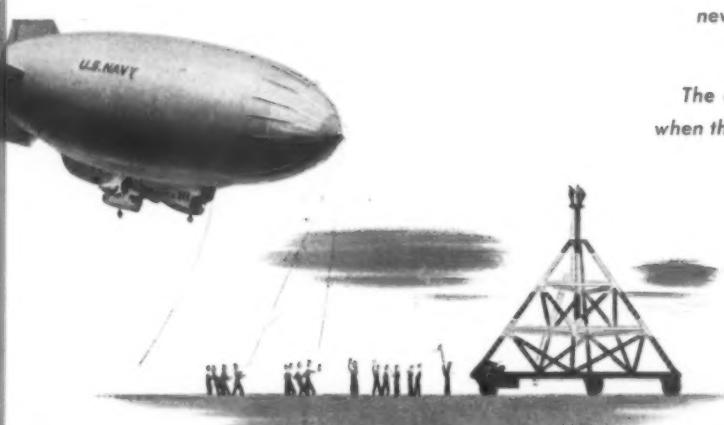


reverse thrust puts brakes on blimps

The ease of handling achieved in the Navy's new "M" airship, largest non-rigid type ever built, again illustrates the versatility of the Curtiss Electric.

This first application of fully controllable-reversible propellers to lighter-than-air craft provides many advantages. Reverse thrust allows a smaller crew to halt and moor the new blimps when, relieved of fuel and bomb loads, they must be flown down in light condition.

The controllable feature contributes to faster take-off when the blimps, heavily loaded, depend on dynamic lift to leave the ground, and in addition increases the range through reduced fuel consumption.



CURTISS
ELECTRIC PROPELLERS

Curtiss-Wright Corporation, Propeller Division

I PREDICT...

by Raymond Loewy

Noted Industrial Designer



After the war you will travel more than you ever have. And one of the developments that will make it possible is the new helicopter air bus. This remarkable aeronautical achievement ushers in a really new mode of transportation that will enable you to make short air trips quickly, inexpensively and in complete comfort. Present bus terminals will be adapted as landing ports and maintenance hangars so you will take off and arrive in central sections of cities and towns. The multi-passenger helicopter air bus, already endorsed by authorities as entirely practical, will bring air travel to millions of persons and thousands of communities that now lack this form of transportation. When you buy War Bonds today remember they will enable you to experience this and many other marvels in tomorrow's world!

Note: The Weatherhead Company, one of the oldest and most important manufacturers of parts for the aviation industry, is prepared for the day when its four plants will again be contributing to aviation's peacetime needs.

Look Ahead with

Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND, OHIO
Manufacturers of vital parts for the automotive, aviation,
refrigeration and other key industries.

Plants: Cleveland, Columbia City, Ind., Los Angeles
Canada—St. Thomas, Ontario



FREE: Write on company letterhead for "Seeds Of Industry"—a history of The Weatherhead Company, its many facilities and diversified products.



Corsair Range

Day after day Corsair pilots go into action 350 miles or more from base, with fuel and ammunition to spare. The rated range of the Vought Corsair now exceeds 1500 miles.

CHANCE VOUGHT AIRCRAFT
STRATFORD, CONNECTICUT
ONE OF THE FOUR DIVISIONS OF UNITED AIRCRAFT CORPORATION

Remember the battle that was lost "all for the want of a horseshoe nail"? Important little nail—wasn't it?

Piston rings are relatively small, too. But not small in importance to aircraft engine manufacturers.

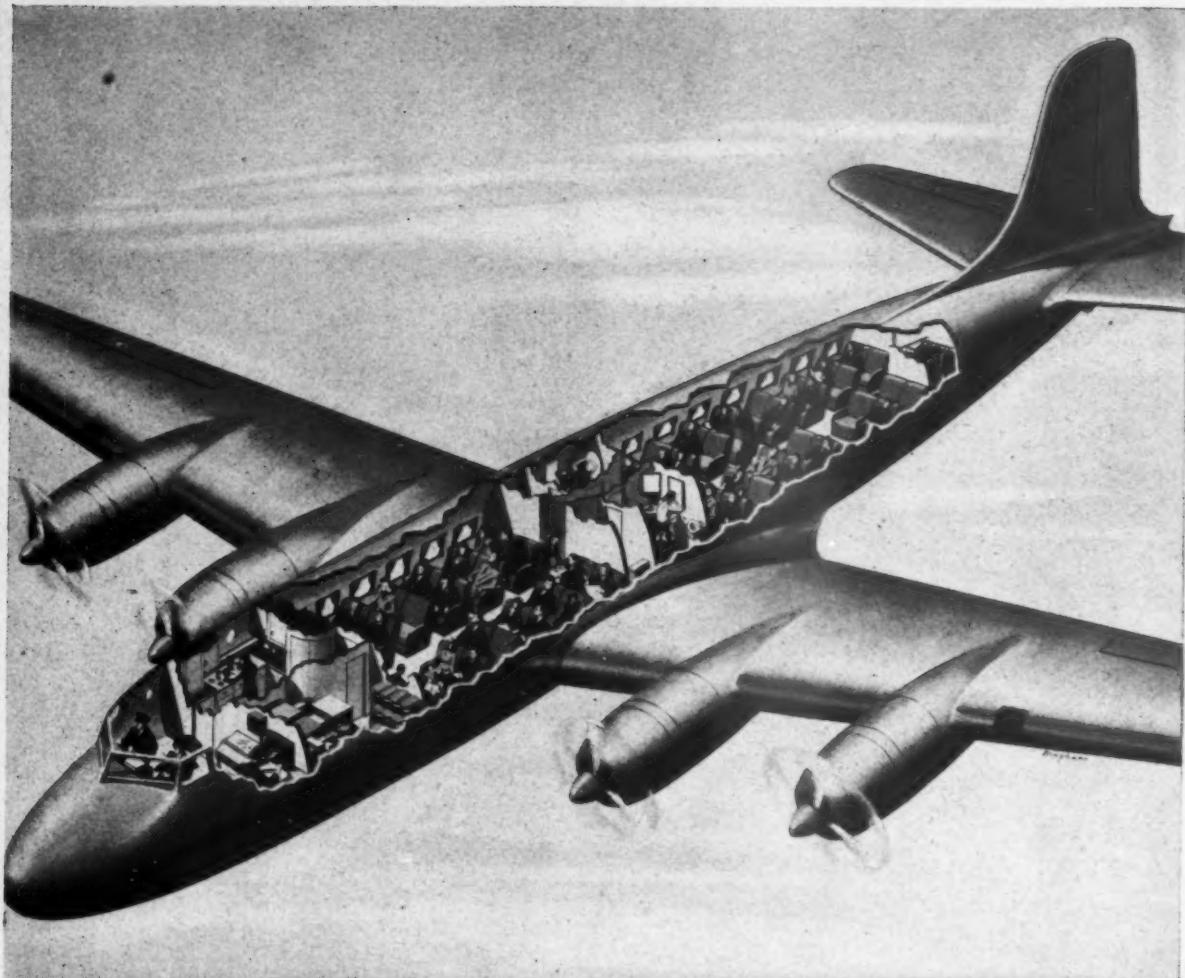




The world's finest piston rings are standard equipment for these
world-famous aircraft engines—Allison • Wright • Buick-built
Pratt & Whitney • Packard-built Rolls-Royce • Franklin • Warner.

The Perfect Circle Companies

Hagerstown, Indiana • Richmond, Indiana • Newcastle, Indiana • Tipton, Indiana • Toronto, Ontario, Canada



You'll find new comfort in the clouds in the

Age of Flight

No matter how you travel in wartime America today, you won't find the comfort which public carriers would like to offer. All transportation facilities are overtaxed by an unprecedented volume of traffic. Today, for example, 85% of United's business is of a wartime nature.

But United is planning ahead, preparing an expanded and even finer air service for the future. And all of us are looking forward to the day when more people will become acquainted with the comforts of air travel. Nowhere is greater promise of new travel comfort to be found than in the coming Age of Flight.

After victory, United will put into

service new, 44 to 50 passenger Mainliners — huge, four-engine planes with a speed of 220 miles an hour. They will carry a payload — passengers, mail and cargo — four times as great as today's largest commercial ships, and will fly coast to coast in 11 hours!

You will find comfort never before known to air travel. You will enjoy even finer dining service, sleep in soft, restful, roomy berths. There will be commodious dressing rooms; big, cushiony seats for day travel.

This is not a far-off dream, at all. Planes identical to these luxurious Mainliners of tomorrow were designed for United before the war. Without major structural changes, these

planes were turned over to the U. S. Army Air Transport Command and are today proving their dependability and efficiency all over the world.

Improving the service for its passengers, at fares that are continually being lowered, has always been a chief concern of United Air Lines. In the post-war era, we will be able to offer ever greater comforts and conveniences.

* Buy War Bonds and Stamps for Victory

**UNITED
AIR LINES**

THE MAIN LINE AIRWAY

I
G
D
A

A
tion
gov
Uni
Brit
in
Mar
that
be
pict
Mo
by
indu
to t
Amb
head
Gre
and
in th
dipl
It
tion
confe
broo
Gove
succ

It
tion
confe
broo
Gove
succ

Am

International Air Conference Nears

Grew to Head U. S. Delegation; Russia Accepts Invitation

By WAYNE W. PARRISH

AS THIS issue went to press the long-awaited postwar international air conference with leading governments was approaching. The United States had asked Great Britain for a conference to be held in Washington the third week of March but it appeared doubtful that the preliminary meeting would be held this soon. But the general picture was moving ahead rapidly.

Meantime it was announced exclusively by *American Aviation Daily*, the daily industry news service of *American Aviation*, that Joseph C. Grew, special assistant to the Secretary of State, and former Ambassador to Japan, had been appointed head of the American delegation. Mr. Grew has had no background in aviation, and is not expected to participate actively in the conferences, but he will provide the diplomatic front for the U. S. Government.

It was also revealed by *American Aviation Daily* that the first move for an air conference was made by Lord Beaverbrook, as Lord Privy Seal of the British Government, last fall following the unsuccessful conference of the British Com-

monwealth in London last October. At that time representatives of New Zealand, Canada, Australia and South Africa met with Lord Beaverbrook in an effort to agree upon an all-Empire network of air services. But the Dominions have independent plans for airlines and were not receptive to becoming mere integral parts of an All-Empire system.

When Lord Beaverbrook asked the U. S. for a conference, the U. S. replied that it would probably not be ready for such a meeting until after the November, 1944 elections. But in February, 1944, the U. S. unexpectedly informed London that it was now ready. Subsequent exchanges of notes resulted in the U. S. inviting Great Britain for a conference to be held in Washington the third week of March. At the same time, Washington invited Canada to attend.

London replied that it would be embarrassing to have only one Dominion, Canada, without having Australia, New Zealand and South Africa. At this point the U. S. informed Great Britain that it had invited Russia to attend, and it has been learned subsequently that Russia has accepted. China will also probably be represented, and the U. S. suggested that perhaps Brazil and Mexico might also be brought in.

As this issue went to press efforts were being made to complete arrangements for a date and for the naming of representatives of various governments.

Assistant Secretary of State Adolf A. Berle, who is being given considerable credit in some quarters for his collabora-

tion with Canada and for his astute testimony before Senate committees, will undoubtedly play an important role in the conferences. So will L. Welch Pogue, chairman of the Civil Aeronautics Board, and William A. M. Burden, Assistant Secretary of Commerce.

It is emphasized that the conference is to be purely a preliminary one, paving the way for a full United Nations air conference at a later date.

It is quite clear that all governments consider postwar international air transportation to be of the most vital concern and that whatever happens, there will be fairly strong governmental controls established. By far the most liberal attitude is being taken by the United States which would like to see commercial airline operators competing in the best interests of the traveling public and development of air transport equipment and facilities. The British and Canadian attitude is toward a much more restrictive control.

Considerable significance is attached to the American invitation to Russia and the latter's acceptance.

It is also considered significant that both the Canadian and British Governments have proposed the establishment of International Air Transport Authorities and both would give such an Authority a great deal of power in the matter of licensing international air services, limiting frequencies of service, regulating fares, and other matters. The U. S. agenda as submitted to the other governments takes no position but merely lists topics to be dis-

(Turn page)



Adolf A. Berle
Will Play Big Role



Lord Beaverbrook
Made The First Move



Joseph C. Grew
The U. S. Diplomatic 'Front'

Harris and Ewing Photos

(Continued from preceding page)

cussed, although it does mention the question of creating an international civil aviation commission. The U. S., however, is not proposing to establish an international regulatory body with as much power as the Canadians and British propose. And it is also significant that the Canadian and British governments are working independent of each other and that their plans vary considerably in detail.

News From Britain

Aircraft of B.O.A.C. flew 12,500,000 miles in 1943, carried 65,687 Government priority passengers (the only passengers the Corporation is permitted to carry), 1,271 tons of mail and 3,975 tons of freight. Routes operated totalled approximately 50,000 miles and included the North Atlantic Return Ferry, another trans-Atlantic service between the United Kingdom and Baltimore, services to West Africa, the Middle East, from Durban to Calcutta, across Africa and a network of services from Cairo through the Near and Middle East. A staff of 15,000 is spread over the B.O.A.C. routes.

Mr. J. W. S. Brancker has been appointed Traffic Director of B.O.A.C., in succession to Mr. D. H. Handover, now Air Advisor to the four British main-line railway companies. Mr. Brancker has been with B.O.A.C. since its formation and was formerly with Imperial Airways. He has served on the Empire routes, mainly in India and Africa and was formerly Regional Director for West Africa.

Philco Radio and Television Corporation of Great Britain has acquired General Aircraft Limited's holding of 431,000 two shilling Deferred shares (nominal value of £43,100—about \$10,775) in Aero Engines Ltd. Mr. E. C. Gordon England, Mr. J. M. Ferguson and Mr. W. S. Stephenson have retired from the Board of Aero En-

British Laborites Want World Aviation Authority With Supreme Control of Air

Laborite members of the House of Commons in England recently demanded an international agreement for setting up a world aviation authority which would have supreme control of air transportation.

Condemning the British government's silence on its policy for postwar civil flying, "despite the country's insistent demand for clear-cut plans," the group contended that such an authority should own all the aircraft used for transportation purposes and control all airdromes, which should have extra-territorial rights.

In addition, it was proposed that a world communications authority should be

gines and have been succeeded by Mr. L. D. Bennett, Chairman of the Philco company, Mr. E. C. Baillie and Mr. S. J. Gordon. Sir Maurice Bonham-Carter continues as Chairman. The two companies expect to co-operate in a wide field of development and production after the War.

The Air League of the British Empire has started a campaign to make the British public more air transport minded and hopes to establish Branches throughout Great Britain. At its first meeting of the campaign, held in the Guildhall on Jan. 17 under the auspices of the Lord Mayor of London, to interest City men, the policy of monopoly for British Air Transport was strongly denounced. The Air League was founded in 1939 and among its achievements were the organization in 1934 of Empire Air Day at which the public was given an opportunity to visit R.A.F. stations throughout the country until the War, and the organization in 1938 of the Air Defense Cadet Corps, which was taken over by the Air Ministry

built to control every form of communications.

Replying to an assertion by a Conservative member that there could be no internationalization so long as the United States and the Soviet Union hold their present views, a Laborite said that Britain should "go ahead without them, starting with liberated Holland and liberated France."

At the end of the debate, Captain Harold Harrington Balfour, Under Secretary of State for Air, made it clear that while the government supported the principle of international cooperation it did not consider that such cooperation excludes national air lines run or sponsored by state or lines run by private enterprise.

in 1941 as the Air Training Corps. The Corps has provided some 50,000 boys for the R.A.F. and Fleet Air Arm.

The Air League has strengthened its executive board by the appointment of Mr. E. Colston Shepherd, formerly Editor of "The Aeroplane," as Secretary-General. In addition, Air Commodore J. A. Chamier, Secretary-General until 1938 has retired from the R.A.F. and returned to the League as Executive Controller.

Rotol Ltd., the well-known airscrew company owned jointly by Rolls-Royce Ltd. and the Bristol Aeroplane Company, has acquired Hordern-Richmond Aircraft Company makers of hydulignum. Before the War Hordern-Richmond made light aeroplanes.

Cunliffe-Owen Aircraft Ltd., the company which held the patent for the Bleriot flying wing aircraft before the War, has announced the resignation of Mr. R. M. Hoyes, Managing Director, and Mr. R. E. Chown, Secretary. As from Feb. 21 the new Managing Director is Mr. M. J. H. Bruce. Mr. J. G. White has been appointed Secretary.

The subscribers to the articles of association of British Latin-American Air Lines Ltd. are: Lord Essendon, Royal Mail Lines Ltd., Lord Vesty, The Blue Star Lines Ltd., Mr. W. H. Davies, The Pacific Steam Navigation Co., Mr. J. W. Booth, The Booth Steamship Co. Ltd., and Sir Philip Haldimand, Lamport and Holt Lines Ltd. Secretary of the company is Mr. S. A. Black, 14, Leadenhall St., London, E. C. 2.

de Havilland Aircraft Co. Ltd. has formed a separate company for its aero-engines, the well-known Gipsy series. The new firm is known as de Havilland Engine Co. Ltd., and is a private company with a capital of £250,000 (about \$1,000,000) in 250,000 shares of £1 (\$4.00). The directors are: F. T. Hearle, Sir Geoffrey de Havilland, W. E. Nixon, F. E. N. St. Barbe and F. B. Halford—all directors of the Aircraft company.

Mr. B. C. H. Cross has been appointed Advisor on Air Transport to the Secretary of State for the Colonies. The services of Mr. Cross have been made available by B.O.A.C. with whom he has been Regional Director, Central Africa. He was with Imperial Airways Ltd. for some years and served as Manager in the Near East area.



Lieut. Thomas W. Smith (pointing) is shown with the Lockheed P-38 in which he literally 'ran over' a Messerschmitt 109 in a head-on collision over Italy, sending it crashing in flames. Smith flew the Lightning 300 miles back to a wheat field adjoining his base on one engine. He calls the second engine 'round-trip ticket.'

Senators Give Approval to Internat'l Air Conferences

Assistant Secretary of State for Aviation May Be Appointed

By KATHERINE E. JOHNSEN

SENATORS FLASHED a green light for international aviation conferences during the fortnight and the State Department proceeded immediately to make necessary arrangements with other nations.

Last July, Secretary of State Cordell Hull publicly notified Sen. Bennett C. Clark (D., Mo.), chairman of the aviation subcommittee of Senate Commerce Committee, that no international discussions would take place prior to consultation with his subcommittee. Last fortnight, *American Aviation Daily* was first to report, Clark proposed to Assistant Secretary of State Adolf A. Berle, that the appropriate time for preliminary international negotiations is now at hand.

The State Department is now in the process of exchanging communications with foreign nations, preparatory to the conferences. The United States, Great Britain, Russia and Canada are expected to be the main parties. (See page 17).

Key Senators cancelled out-of-town engagements and predicted concrete developments on postwar air policy "in the next two months."

Pointing toward such developments, it was noted from Capitol Hill:

- That there were current statements that an Assistant Secretary of State for Aviation would be named.

- That the Senate's powerful Foreign Relations Committee opened hearings on postwar international aviation. (Berle suggested this to the Committee's chairman, Sen. Tom Connally (D., Tex.) shortly after being given the "go ahead" by Commerce Committeemen).

- That three members of Senate Commerce Committee who have been studying the ramifications of postwar air policy for many months prepared to submit their "guidepost" report to the Executive branch of the Government. (*American Aviation* February 15).

Coincident with statements on Capitol Hill that the White House has already made up its mind on the appointment of an Assistant Secretary of State for Aviation, the President asked both Houses of Congress for legislation authorizing the appointment of two additional Assistant Secretaries, and Administration "weathercock," Sen. Claude Pepper (D., Fla.) introduced legislation authorizing the appointment of an Assistant Secretary of Aviation.

House Foreign Affairs Committee's Chairman, Rep. Sol Bloom (D., N. Y.) introduced the legislation requested by the President providing for two additional Assistant Secretaries.

The form which international air commitments, which may be effectuated at

forthcoming international conferences should take, highlighted discussion in an executive session of Senate Foreign Relations Committee, it was reported to *American Aviation*.

Testimony by CAB Chairman L. Welch Pogue, CAB vice chairman, Edward P. Warner, and Assistant Secretary of State Adolf A. Berle opened what promised to be an intensive and lively study of postwar aviation by the Committee. Foreign Relations may hold sessions concurrently with international conferences, it was reported, and representatives of foreign nations may be invited to testify before the Senate Committee if conferences are held in or near Washington.

Executive Agreements Likely

No decisions as to the procedure to be followed in international commitments were reached at last fortnight's session of Foreign Relations, it is understood, but the pros and cons of executive agreements and treaties were discussed extensively. An executive agreement would not be subject to Senate ratification. The likely procedure appears to call for executive agreements, effective until a treaty is negotiated after the war. The procedure followed by the Government with UNRRA, with respect to food, may be applied to the international aviation field.

At any rate, any international commitment will indirectly have to have the stamp of Congressional approval, with an appropriation, and it is for that reason, if no other, that the Executive and the Legislative branches are both agreed to work out the problems of international air policy "hand-in-hand."

It was generally predicted on Capitol Hill, however, that no permanent inter-

national commitments will be made until after the war.

While developments indicated that foreign aviation will take the spotlight from domestic aviation in the immediate future in the Senate, the interlocking relationship of the two phases of postwar aviation were obvious to Senators.

The three Senate Commerce Committee—Sen. Josiah Bailey (D., N. C.), Sen. Bennett C. Clark (D., Mo.), and Sen. Owen Brewster (R., Me.)—will cover both postwar domestic and foreign aviation in their report to the Executive branch, it is understood.

The scattered committee jurisdiction of various aspects of postwar aviation is expected to make it almost a Senate-wide subject.

It is expected that first decisions will be formulated for foreign aviation, and that from these decisions Senators will work back onto domestic aviation. The membership of Foreign Relations includes the chairmen of eight other committees of the Senate, and several Senators who are also members of Commerce Committee and Interstate Commerce—committees which will play the major roles in threshing out the nation's domestic aviation policy. In addition, Sen. Pepper (D., Fla.), Austin (R., Vt.), and Lucas (D., Ill.), members of Foreign Relations, form a subcommittee on domestic aviation of the George Postwar Planning Committee. Foreign Relations Committeemen are expected to carry their work on aviation to other committees of the Senate of which they are also members, so that all provisions for postwar aviation—domestic and foreign—will be consistent with an over-all policy.

The importance of avoiding the adoption of provisions for individual aspects which would work contrary to the overall policy desired, is emphasized by Senators. As an example, it was pointed out to *American Aviation* that inadequate airline tax policies—a purely domestic phase of aviation—might have the effect of driving airline development to other countries, thus risking the defeat of an accepted foreign aviation policy.

May Form Joint Group

Senators are still considering the idea of forming a joint group to consider aviation, with representation from Foreign Relations, Commerce, and probably eventually from Interstate Commerce. However, Foreign Relations Committeemen have indicated a desire to meet as a full committee to hear witnesses and keep apace of developments on the international scene. Members of Senate Commerce may be invited to attend Foreign Relations sessions, and vice versa. At a later date, when Senators open considerations of purely domestic aspects of postwar aviation, it is viewed as inevitable that railroad issues will force participation in aviation discussions by members of Interstate Commerce, the committee having jurisdiction over railroads.

Senate Commerce Committee, having jurisdiction over domestic aviation, including "airline" policy, will hold open hearings after winding up a few scheduled executive sessions at which witnesses from Pan American Airways, American Export Airlines, Transcontinental and Western Air, Inc., and Maritime Commission Chairman, Admiral Emory S. Land, are slated to testify. These sessions were delayed by the Senate recess called because of the death of Minority Leader Charles L. McNary.

Aviation Calendar

March 21—Meeting of Civil Aviation Joint Legislative Committee; policy committee to report; Washington, D. C.

March 22—First annual dinner of Wings Club, Waldorf Astoria Hotel, New York City.

March 25 to April 1—First annual Northwest Aviation Exposition, Minneapolis Municipal Auditorium, sponsored by Greater Twin Cities Chapter of NAA.

March 29—Meeting of East Coast Aircraft War Production Council, guests of Bell Aircraft Corp., Marietta, Ga.

April 17—Southern Nevada Aviation Day, Las Vegas, Nev.

April 24—Joint meeting, East and West Coast Aircraft War Production Councils, Los Angeles.

April 28-30—Southwest Aircraft and Accessories Exposition, Mustang Airport, Dallas, Tex.

July 10-12—American Association of Airport Executives, annual meeting, Sherman Hotel, Chicago, Ill.

Nov. 11-15—Second National Aviation Planning Clinic, Oklahoma City.

Truman Report Commends Aviation Mfrs.

Recommendations for Contract Termination, Surplus Plants and Reserves Submitted

THE TRUMAN COMMITTEE in its annual report issued during the fortnight highly commends the performance of the aircraft industry which in the years 1941, 1942, and 1943 produced 153,061 planes.

Small aircraft parts and components manufacturers who "tend to go unnoticed" are also given credit in the report for their contribution to a successful aircraft program.

Certain aspects of the aircraft program have been criticized by the Committee in the past, and other aspects will "undoubtedly" be criticized in the future, but this "should not be allowed to detract from the record of the industry as a whole," the Committee observed.

The nation's annual plane production rate is now over the 100,000 mark, the report pointed out. In addition to achieving this quantity production, the year 1943 evidenced "some progress . . . toward the stabilization . . . on our best types, which in practically all cases are equal or superior to anything produced elsewhere." The ratio of combat planes to trainers and of superior planes to less desirable ones is steadily increasing, it was stated.

Fourteen pages of the 168-page report are devoted to a review of military and naval combat, transport and cargo planes, in production in 1943 and now coming into production.

Reviewing the performance of the aviation industry during the past year and surveying major problems now confronting it, the report made observations over a wide field. Following, these are summarized.

● Production Battle Won

The nation's major war production battles have been won, but major combat operations lie ahead. "The war is raging fiercely . . . the biggest battles have yet to be fought and . . . there may be unexpected and severe setbacks along the road to victory." Only a fraction of our aircraft production has as yet engaged in combat. To illustrate, through January 1944, 105,126 tactical type airplanes were

completed, but only recently have our largest single operations involved as many as 2,000 planes. This means that "the severe losses already sustained by our enemies are small when compared to those which they must expect to be subjected to in the near future."

● Long-range aircraft, a major need.

Today one of the nation's greatest needs is for longer range combat aircraft with large carrying capacity. "We will have to strain every effort to produce them in ever increasing quantities."

Aircraft production from this point on will be a task of selective production rather than one of "indiscriminate mass production." The military "very properly err on the side of too much," and increasing cutbacks in the war program will be in order in the near future. "The time is fast approaching . . . when we will have all of the less desirable and more obsolete types of combat and trainer aircraft that we can use and will have to cut back contracts for production of aircraft."

● Contract Cancellations.

Contract cancellations will be at a rate of \$1,500,000,000 per month during the first six months of 1944, according to WPB estimates. Termination settlements should be made on an over-all company basis rather than on an individual contract basis, similar to the practice that has been followed in renegotiation.

Thought should be given to the possibility of turning contract termination settlements over to renegotiation boards.

Investigation indicates that the two major problems in termination proceedings, for which some over-all solution must be found are:

(1) "What shall be done with unused inventory?"

(2) "What shall be done about large inventories accumulated for use in war production, but which cannot be traced directly to a particular individual contract which is the subject of a particular termination proceeding?"

● Manpower Utilization.

There have been outstanding examples in the aircraft industry of reduction of man-hours required in production of planes. Time required on the Flying Fortress (B-17), produced by Boeing at Seattle, has been cut from 35,400 man-hours to 18,700 man-hours. Time on the Liberator (B-24), produced by Consolidated Vultee at San Diego, has been reduced from 24,800 man-hours to 15,400 man-hours.

Despite these records, however, there has been a tendency on the part of aircraft manufacturers to over-estimate manpower needs which has resulted in increasing cost to the Government. Re-examination has reduced these estimates. It is urged that aircraft employers continue to scrutinize manpower needs and keep them at a minimum required for production. It is recommended that: "(1) failure to utilize employees efficiently be given great weight when determining profits to be allowed after renegotiation and that (2) the officers representing the procurement agencies in war plants, particularly those in areas of critical labor shortages, should be removed and disciplined where they fail to observe and report inefficiency in utilizing workers."

● Manpower Supply and Civilian Production.

The argument that the return to civilian production should be withheld so that there will be a larger labor supply available for critical labor areas, such as the West Coast aircraft center, is far outweighed by other arguments favoring a return to civilian production as early as possible. For example, retaining the civilian standard of living on as high a plane as possible, so long as war production is not retarded, will give war workers added incentives for steady employment.

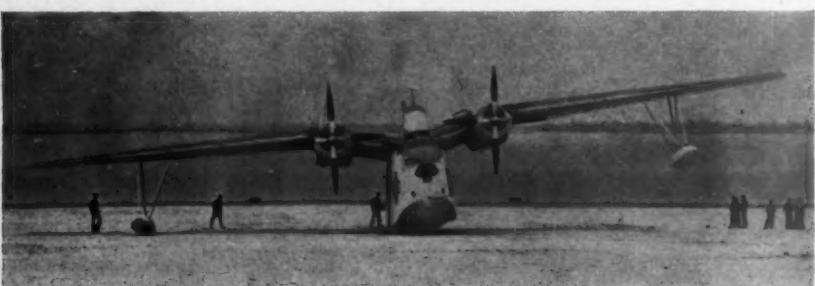
● Surplus Commodities.

Congress should decide promptly what agency, new or existing, is to be charged with the responsibility for disposing of surplus commodities. Disposal should not be left to the procurement agencies, but should be done by a single agency and according to a single well-defined policy.

In determining prices at which surplus commodities are to be offered, allowance should be made for excess costs due to production during wartime and for depreciation through the average use which has been made of such articles. Surplus articles must not be dumped upon the market and precautions should be taken that they are sold to persons who have use for them rather than to speculators who may withhold them from the market when they are needed, or dump them on the market to the detriment of industry. A possible method of discouraging speculative buying of surplus commodities might be to provide specifically for recapture by the Government of speculative profits derived from

(Turn to page 38)

'—And Not Even a Rivet Popped'



This is a Martin PBM-3 Mariner the morning after it was set down on dry land recently. The 24-ton patrol bomber was fully loaded, yet 'not even a rivet popped,' the Glenn L. Martin Co. reported. The only damage was a couple of coats of paint scraped off the bottom of the hull, and damage to one of the wing-tip floats.

Senate Committee Releases Agenda of Aviation Problems

Will Serve as Guide for Future Action by Clark Group

SENATE Commerce Committee's aviation subcommittee wound up exploratory discussions and background-gathering on postwar aviation during the fortnight and prepared to tackle the wide field of problems requiring solution.

This development was marked by the release of a complete agenda presenting the problems of postwar aviation, both domestic and foreign, by the subcommittee's chairman, Sen. Bennett C. Clark (D., Mo.). The agenda makes no recommendations. It states problems and lists the various alternative solutions and evaluations which will have to be made in determining solutions. It will act as an outline for the subcommittee to follow in the future.

Declaring that "the issue at this time is to determine what steps are best calculated to permit the United States to retain the leadership in international air transportation which it had attained before the war and to which its resources entitle it, and to extend American activity in this field as one of the most important influences in the preservation of peace," the agenda divided this issue into two parts: the international phase and the national phase.

Following, *American Aviation* summarizes the main problems presented in the agenda.

I. The International Phase:

"Should the United States abandon the principle of sovereignty of the air and the method of securing operating rights in foreign countries under which our international air transportation has been conducted up to this time, in favor of attempting to secure international agreement on some general formula such as 'freedom of the air' or 'freedom of innocent passage' or a practice of obtaining all operating rights by governmental agreement?"

(a) In determining this question there must be an "evaluation of the present system whereby operating rights have been secured generally in the form of unilateral franchises issued to the U. S. airline by the foreign country and in exceptional cases, (such as the transatlantic service) through bilateral franchises issued by each of the respective governments to the airline of the other."

(b) There must also be an evaluation "of the suggestion that the U. S. should completely abandon the existing system in favor of a proposed international agreement for 'freedom of the air'." This evaluation should include, among other matters, consideration of the following: the meaning of "freedom of the air" which countries in the past have favored "free air" and why; questions of national security; questions of competition with

cheap labor countries; the effect of "free air" on subsidy cost to the U. S.; the possibility that "free air" would lead to subsidy wars and international friction.

(c) There must be an "evaluation of the suggestion of abandoning the existing system of obtaining operating franchises wherever possible by application by the American flag airline to the foreign government, in favor of a practice whereby all operating rights are secured by our Government through executive agreements."

This evaluation must, among other matters, give consideration to: the practical effect—when a foreign government is approached by our Government rather than by an American flag airline, it will demand reciprocity as a matter of national principle and prestige; the effect of reciprocity in diluting American flag traffic, particularly on routes traversing a number of foreign countries; the effect of reciprocal agreements on the development of pseudo-foreign airlines—airlines organized under the laws of various countries but actually financed and controlled by Axis or other European capital, or by U. S. capital desiring to be free of U. S. economic and safety regulations and wage standards.

(d) There must be an evaluation of the suggestion that the U. S. should seek an international agreement for "freedom of innocent passage." Among other matters,

Text Available

The complete text of the Senate Aviation Subcommittee's statement of the agenda for postwar aviation planning is available from *American Aviation* at \$1.00 per copy; 25 cents for each additional copy. Address: 300 American Building, 1317 F Street, N. W., Washington 4, D. C.

this evaluation should give consideration to: how much interested the U. S. is in "freedom of innocent passage" as compared with the right to load and unload traffic; the possibility that "freedom of innocent passage" would lead to "freedom of the air"; what nations favor "freedom of innocent passage" and why.

II. The National Phase:

"Through what agency or agencies should the U. S. seek to maintain its position in international air transportation?"

(a) In determining this question the desirability of competition in international air transportation must be considered. Among other matters, this consideration should cover: the possibility that one American company will be played off against another by foreign governments; the need of concentration of American effort against foreign competition; national defense problems.

(b) Special consideration should be given to the proposals by the two groups desiring to engage in international air transportation for the first time: the domestic airlines and the steamship companies.

In evaluating the proposal of the 16 domestic airlines there must be considered, among other matters, "the advantages and disadvantages of 'one company service' from interior points to points abroad as compared with service from gateways via all domestic carriers." The competitive advantages which a domestic airline, reaching sources of traffic in the interior, would have over the existing American flag international airlines which do not proceed beyond the gateways, must also be considered.

In evaluating the proposals of steamship lines to engage in air transportation, the extent to which this will be necessary to meet foreign competition must, among other matters, be considered.

Other proposals for postwar international air transportation which must be evaluated are: (1) the establishment of a system of two or three regional monopolies; (2) the establishment of a single American flag international airline or community company.

If the national interest indicates the desirability of a single national company, how it should be owned and regulated must be determined. This will raise several issues, including: What are the advantages and disadvantages of Government ownership both at home and abroad? If the company is to be privately owned, what interests should be admitted to ownership in it and under what circumstances? If the company is to be privately owned, what other methods of governmental regulations, if any, should be adopted in addition to regulation by the CAB (whose orders with respect to granting or denying certificates for new routes are subject to approval by the President)? Should there be a policy board to advise the CAB on international relations and defense questions?

Boeing's 6-Ton Camera



The bottleneck of template-making has been broken at Boeing Aircraft Co. through use of this six-ton camera. Its 'snapshots' weigh 300 pounds. 'Films' are developed in tanks holding 360 gallons of solution. Glenn H. Jones, Boeing's photo template chief, displays an interesting contrast—the giant 'box' and, in his hand, a vest pocket camera.

Dept. of Commerce Releases Aircraft Export Figures for '41

THE UNITED STATES exported aircraft products valued at \$626,929,352 in 1941, the Department of Commerce revealed last week. The Department granted American Aviation access to its aircraft export figures for the first time since 1940.

The figures, compiled by the Machinery and Motive Products Unit, Division of Industrial Economy, Bureau of Foreign and Domestic Commerce, include lend-lease shipments but do not include products sent to the Army or Navy. The Department points out that those few exports to potential enemies of 1941 did not reach their destinations. In some cases, declarations were filed but the goods was not shipped.

The 1941 exports totaled twice as much as those in 1940, and five times those in 1939. The totals for 1933 through 1940 follow:

Country	Land Planes (Powered)		Land Planes (Minus Engines)		Seaplanes and Amphibians		Engines		Engine Parts and Accessories		Parachutes and Parts and Parts Accessories		General Parts and Accessories		Total Exports Value	
	Number	Value	Number	Value	Number	Value	Number	Value	Value	Value	Value	Value	Value	Value	Value	Value
Aden	20	\$47,792	183	\$1,180,328	1937	\$39,404,469										
Argentina	68	6,902,860	184	17,952,938	1938	68,227,689										
Australia			185	14,290,343	1939	117,307,212										
Arcas and Models, Inc.			186	23,143,203	1940	311,871,473										
Belgian Congo	7	382,728														
Bermuda																
Bolivia																
Brazil	3	204,483														
British East Africa	171	2,346,131														
British Guiana																
British Honduras																
British India	24	1,268,565														
British Malaya	163	9,700,315														
British Oceania																
Burma	1	40,000														
Canada	1,398	45,405,539	9	450,540	40	4,940,697	3,507	18,171,533	7,267,928	2,648,605	4,580,086	468,145	11,122,967	95,445,079		
China	47	1,151,703														
Colombia	140	7,068,322														
Costa Rica	2	36,200														
Cuba	1	22,286														
Dominican Republic	6	19,250														
Ecuador	4	6,489														
Egypt	805	59,207,085														
Falkland Is.																
Finland																
France																
French Guiana																
French Indo-China																
French Oceania																
French West Indies																
Gold Coast	265	13,762,382														
Greece	22	1,230,000														
Greenland																
Guttmannia	2	30,250														
Haiti	1	2,575														
Honduras	4	75,001														
Hong Kong	2	150,383														
Iceland	15	980,000														
Iran	10	685,015														
Iraq																
Jamaica																

Exports
11,472
7,980
116
788

Country	Land Planes (Powered)		Land Planes (Minus Engines)		Seaplanes and Amphibians		Engines		Engine Parts and Accessories		Propellers and Parts		Instruments and Parts		Parachutes and Parts		General Parts and Accessories		Total Exports Value	
	Number	Value	Number	Value	Number	Value	Number	Value	Number	Value	Number	Value	Number	Value	Number	Value	Number	Value	Number	Value
Japan	.....	.....	.....	.....	.....	.....	.....	.....	1,854	2,318	.....	.....	.....	.....	36,273	40,445	.....	.....	.....	.....
Liberia	.....	.....	.....	.....	.....	.....	.....	1,286	320	.....	.....	.....	.....	305	1,923	.....	.....	.....	.....
Malta, Gozo, and Cyprus	64	1,228,999	4	334,146	40	39,706	115,911	12,038	18,254	49,376	3,236	43,200	1,1	18,254	1,815,412	11	11	11	11	11
Mexico	.....	.....	.....	.....	.....	.....	.....	10,000	6,732	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morocco	.....	.....	.....	.....	.....	.....	.....	205,829	884,551	186,113	189,123	184,693	1,191,007	189,123	16,089,160	28,931	28,931	28,931	28,931	
Mozambique	1	2,093	5	374,190	43	5,147,766	18	7,200	6,445	7,689	5,381	5,381	5,381	5,381	5,381	5,381	5,381	5,381	5,381	5,381
Netherlands Indies	179	7,742,894	5	374,190	43	5,147,766	1	2	1,376	1,376	1,345	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Newfoundland and Labrador	.....	.....	.....	.....	.....	.....	.....	1	15,387	1,376	1,345	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
New Zealand	141	7,064,338	3	27,510	1	1,376	1	2	1,467	1,467	291	53	53	53	53	53	53	53	53	53
Nicaragua	.....	.....	.....	.....	.....	.....	.....	1	1,376	1,467	291	53	53	53	53	53	53	53	53	53
Nigeria	3	.....	.....	.....	.....	.....	.....	1	1,376	1,467	291	53	53	53	53	53	53	53	53	53
Palestine	.....	.....	.....	.....	.....	.....	.....	1	1,376	1,467	291	53	53	53	53	53	53	53	53	53
Panama, Canal Zone	2	2,800	9	22,003	1	1,376	1	2	1,376	1,376	291	53	53	53	53	53	53	53	53	53
Paraguay	28	667,211	1	2,012	16	117,313	146,035	146,035	37,528	37,528	3,325	5,279	5,279	5,279	5,279	5,279	5,279	5,279	5,279	5,279
Peru	.....	.....	.....	.....	.....	6	35,980	14,378	14,378	14,378	14,378	14,378	14,378	14,378	14,378	14,378	14,378	14,378		
Portugal	3	5,750	1	4,000	2	4,000	1,550	1,550	4,407	4,407	4,407	4,407	4,407	4,407	4,407	4,407	4,407	4,407	4,407	
Salvador	.....	.....	.....	.....	.....	1	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376		
Spain	.....	.....	.....	.....	.....	1	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376		
Sweden	.....	.....	.....	.....	.....	1	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376		
Switzerland	.....	.....	.....	.....	.....	1	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376		
Surinam	.....	.....	.....	.....	.....	1	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376		
Thailand	.....	.....	.....	.....	.....	7	53,773	20,570	20,570	20,570	230	230	230	230	230	230	230	230	230	
Trinidad and Tobago	.....	.....	.....	.....	.....	1	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376		
Turkey	.....	.....	.....	.....	.....	2	10,350	6,375	6,375	6,375	6,375	6,375	6,375	6,375	6,375	6,375	6,375	6,375		
United Kingdom	1,608	188,306,485	98	21,173,350	3,003	48,915,785	14,197,083	14,197,083	11,102,446	11,102,446	5,287,060	6,284	6,284	6,284	6,284	6,284	6,284	6,284	6,284	6,284
Union of South Africa	195	14,025,136	1	1,376	1	1,376	25	335,118	335,118	335,118	141,554	141,554	141,554	141,554	141,554	141,554	141,554	141,554	141,554	141,554
U.S. S. R. (Russia)	210	13,978,336	9	1,376	1	1,376	1	1,376	1,376	1,376	102,174	102,174	102,174	102,174	102,174	102,174	102,174	102,174	102,174	102,174
Uruguay	35	81,237	1	1,376	1	1,376	1	1,376	1,376	1,376	10,417	10,417	10,417	10,417	10,417	10,417	10,417	10,417	10,417	10,417
Venezuela	19	276,871	1	1,376	1	1,376	1	1,376	1,376	1,376	20,917	20,917	20,917	20,917	20,917	20,917	20,917	20,917	20,917	20,917
Yugoslavia	.....	.....	.....	.....	.....	1	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	
Other Asia	.....	.....	.....	.....	.....	1	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	
Other British South Africa	.....	.....	.....	.....	.....	1	15,000	21,301	21,301	21,301	4,883	4,883	4,883	4,883	4,883	4,883	4,883	4,883	4,883	4,883
Other British West Indies	2	123,500	1	350	1	1,376	1	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	
Other Portuguese Africa	2	3,150	1	1,376	1	1,376	1	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	
Other Spanish Africa	.....	.....	.....	.....	.....	1	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	

8,760 Plane Output Last Month; Airframe Weight Up 4 Percent

The number of aircraft accepted in February totaled only 8,760, although early indications were that February production would easily exceed the 9,000 mark. Aircraft Production Board Chairman C. E. Wilson praised the industry however for raising daily output from 339 planes to 350—a new high.

"The weight of airframes produced, which measures productive effort, increased four percent above the January figure," he pointed out. The increase was from 90,300,000 to 93,500,000 pounds. "Again," he said, "the largest acceleration was in tactical types, continuing the emphasis where the need is greatest. This group, which includes fighters, bombers and cargo planes formed 84 percent of the February total." With the announced curtailment of all trainer plane production, the percentage of tactical types is expected to mount swiftly in the next few months.

In commanding the aircraft industry on these results, Wilson emphasized the uniformity in meeting or exceeding schedules. There were 43 aircraft plants, he said, that met or exceeded schedules by a small amount, indicating "sound scheduling and excellent achievement."

Another cause for the industry to be proud of February's production was that it turned out the largest number of heavy bombers ever produced in one month. It was believed that weather conditions and the Los Angeles power strike may have been responsible for the slump experienced in the last two weeks of the month.

Late in February, WPB Chairman Nelson announced that the January total of 8,789 planes had "started the year with a good record for the urgently needed combat types. Outstanding performance was in heavy bombers and it was a good month for Navy dive bombers," he commented. "During January, three models accounted for 42 pounds out of every 100 of airframe weight accepted, as against 36 out of every 100 pounds six months ago. Next to transports, heavy bombers scored the largest increase over December, on the basis of airframe weight. Transports showed the largest increase over December, but important models fell far short."

Type-by-type gains or declines by weight:

January acceptances as % of December
All military
Combat planes
Heavy bombers
Patrol bombers
Medium bombers
Light bombers
Fighters
Transports
Trainers
Communications

Thompson With CAA

Marc Thompson, recently an architect in charge of building design for airports constructed in the 11th Naval District, San Diego has been appointed consultant on airport building design in the Civil Aeronautics Administration. Thompson was scheduled to leave March 13 on a nationwide tour to determine airport building design trends and requirements.

82 WTS Schools to Continue AAF Indoctrination Program

Private Groups Urge WTS Courses in 300 Schools and Colleges

By BARBARA B. C. McNAMEE

WAR TRAINING SERVICE officials during the past fortnight received definite assurance from top Army Air Force officers that the 82 schools remaining in the Flight Indoctrination program would be continued "indefinitely."

Universities, contractors, aviation organizations and a number of Congressmen, however, believe that the WTS program should be continued in about 300 schools to keep intact the facilities of civil aviation. Some officials, close to the whole military flight training program argue that this training can better be conducted in the permanent facilities of the civilian flight schools and colleges than in the temporary buildings and on the temporary fields erected by the armed forces since the start of the war.

In a recent announcement, the War Department stated that discontinuance of the WTS program of training flight instructors "does not indicate any change in policy with respect to the use of civilian flying schools in the flight indoctrination course." Reports reaching *American Aviation* in the past few days lead to the assumption that both Army and Navy Air Forces are contemplating direct contracts with the indoctrination schools, as is done with the Primary schools, by-passing the CAA set-up all together.

The 70 indoctrination schools which have been notified of contract cancellation will complete training of their present classes during the month of June. Quotas for August and September classes at the remaining 82 schools have already been prepared, confirming the Army Air Forces assurance that there is no present intention of cancelling additional contracts. Future classes will be placed on a quartile, rather than the present quintile, basis.

CPT Act 'Facilitates' WTS

Although the extension of the Civilian Pilot Training Act is not necessary to the continuation of War Training Service, R. McLean Stewart, Director, points out that the Act greatly facilitates WTS operations. It would, however, be possible for the CAA unit to continue by receiving its funds from the War and Navy Departments under the War Powers Act.

In determining where aviation cadets can receive the best training, W. L. Jack Nelson, assistant to Stewart, believes the permanent facilities of the colleges and WTS flight training centers should have precedence. In Allentown, Penna., on March 2 he pointed to "an opinion shared by the thousands of men who have contributed to this college training program and an even greater number of young men who have graduated from the Civilian Pilot Training Program and are now flying in the service of their country in questioning the wisdom of the Army and Navy

in their decision to house, feed, train and fly these aviation cadets from the temporary facilities which the Army and Navy have built in this country in the immediate past, rather than continuing to house, feed, train and fly these pilot trainees in the colleges and from the civilian airports of this country."

Nelson asserted that utilization of the colleges and civilian flight schools would also assure adequate facilities for postwar flight training of American youth and would therefore be both "beneficial and economical to our present efforts and contributory to our future welfare." To make this possible, he said, the CPT Act must be extended, appropriations must be secured either through the Armed Forces or directly to CAA and finally, the Air Forces must be persuaded to utilize these facilities in their training programs.

Estimates for CPT appropriations for fiscal 1945 will be submitted in a supplemental appropriation bill, promises Rep. Karl Stefan (R., Neb.). Praising CPT as "one of the most effective measures of national preparedness ever taken," and "an outstanding civilian contribution to the war effort," he added, "It is about time, I think, that credit should be given where credit is due—to CAA."

'CPT Has Justified Itself'

"There can be no doubt that it has more than justified itself by its achievements. CAA has marshalled the civilian aviation resources of the country and forged them into an instrument of the greatest value," Stefan said.

Rep. Stefan reiterated the question which is foremost in the minds of all connected with these schools or proud of their record: "What is going to become of the civilian schools no longer needed by the armed forces?" he asked. "The question is all the more immediate because the original act authorizing the CPT program expires at the end of this fiscal year. . . . What worries me is this: How are we going to assure a fresh crop of pilots each year? We cannot live long on our backlog. . . . The nation of the future will be the nation which most completely provides its youth with an opportunity to fly."

Meanwhile House Interstate and Foreign Commerce Committee's scheduled hearings on the extension of the Act have been twice postponed. A number of bills have been introduced however providing for the extension: HR 4079 (Boren); HR 4092 (Gathings) and HR 4181 (Randolph). In the Senate Senator Pat McCarran (D., Nev.) has introduced S-1432 and held a two-day hearing.

Inactivity also characterizes the Army Air Forces attitude toward the WTS problem in the past two weeks; few flying jobs have been found so far for the instructors and trainees released by the curtailment of the program. A recent Army statement clarified the alternatives before the 899 instructors and the 4,176 students of the abandoned WTS Flight Instructor Courses.

Students on active duty may choose between: aviation cadet training, if qualified; volunteering for technical training in the Air Corps; and volunteering for glider

training, if qualified. The choice of aviation cadet training appears to have been entered primarily for padding, since CAA was only permitted to sign up men under 26 who had already been turned down by aviation cadet selection boards.

Instructors released from training activities as a result of the discontinuance of the program will be given an opportunity to volunteer for aviation cadet training if qualified or to apply for pilot assignments, of which there will be a limited number, in the AAF Air Transport Command, if qualified.

Some small compensation has been given the released students by CAA's announcement that those who had completed elementary and secondary courses would be granted private pilot certificates without additional examinations. Students who have taken cross-country and Link instrument courses and have logged 160 hours in the air will also receive commercial pilot certificates.

The sale of surplus aircraft released by the cancellation of the instructors schools appeared at first to be the easiest problem facing WTS until a recent dispute arose over two differing concepts of "airworthiness."

WTS officials maintain that the same standard of airworthiness which made airplanes safe to operate in the training of pilots and instructors for the Army and Navy govern in the surrendering of aircraft for public sale. WTS has informed operators that all DPC planes which are being released would be accepted on the periodic or 100-hour check by a licensed A&E mechanic according to the terms of the Revocable License Authority for this type inspection is found in Civil Air Regulations 01.25.

However, other CAA officials not directly connected with WTS have exercised the authority granted by CAR 01.25 that the Administrator or the General Inspection Section of CAA is permitted to make an inspection at any time or place as they see fit. They have informed all Regional Managers that whenever a GI inspector makes an inspection, airworthiness will be governed by his findings regardless of the findings of the periodic inspection and that the licensee (operator) will be governed by the inspector's findings.

GI Inspection a Tradition

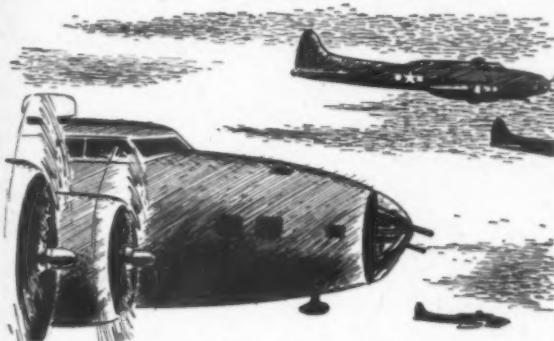
The GI annual inspection grew up as a tradition before the war when annual recertification of all aircraft was required. According to CAR no plane could be recertified which had not been checked during the past 100 hours. From this rule the practice of an extremely thorough annual inspection, which guaranteed the "airworthiness" of the plane for the next year, became widespread although it was never incorporated into the Civil Air Regulations. It is this type inspection which some CAA officials have ordered to be made on all DPC aircraft being released from WTS.

National Aviation Trades Association has advised its members: "We believe that any Operator is fully justified in refusing to allow the General Inspection Section to make any inspection of any aircraft where its surrender under the Revocable License is involved. These aircraft should be inspected by WTS personnel under the same inspection procedure which has hitherto prevailed and should be accepted from the Operator under those conditions."

A Wartime Report...

OF AVIATION PROGRESS

This war has been a tremendous proving ground for aviation petroleum products. To tell you of all the new products which have come from our laboratories would take many pages...and many we would like to tell you about are closely guarded military secrets. So this can be but a partial report of some of the things done by the people who make and market Esso aviation products. We believe it will give you a pretty good idea of what we'll be able to do for everybody who flies after the war.



100-OCTANE SUPERFUEL from our refineries has powered one in every four warplanes of the U. S. and Great Britain.



THE "JERSEY FLUID CATALYTIC" CRACKING PROCESS, developed in our laboratories, has been selected for over 50% of all catalytic cracking plants now in operation or under construction.



THE OILS ESSENTIAL FOR AIRCRAFT HYDRAULIC CONTROLS in stratosphere cold were originated by our research chemists.



THE RUST PREVENTIVE which protects delicate internal parts of airplane engines during shipment was originated in our laboratories. For a long period we alone supplied this to every American airplane engine maker.



ESSO AVIATION OIL . . . the only oil in the world to win approval from all leading American and British Aircraft engine builders.





AUSTRALIA



CHINA



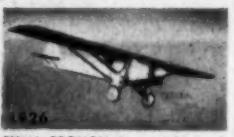
INDIA



U. S. A.



RYAN-STANDARD cabin plane; pioneer passenger airliner.



RYAN BROUHAM, widely used commercially and for many famous flights.



RYAN S-C, cabin plane for private-owner use, featured all-metal construction.



RYAN YO-51 "Dragonfly", Army observation plane with unique performance ability.



RYAN NR-1, low-wing trainer used for formation flight instruction by Navy.



RYAN ST3-S, seaplane trainer of same series as Army's PT-22.



RYAN PT-25, superbly engineered plastic-bonded plywood trainer.

Wings Across the Sea

THAT FREEDOM MAY NOT DIE

Half surrounding Japan's ill-won new territories are Chinese, Indian and Australian air bases. In these countries are thousands of potentially fine pilots, as eager as their American brothers in arms to fight the common enemy.

HELPING ARM OUR ALLIES

But *grounded* valor is of little avail against Japanese air power. Only modern training and modern equipment can turn this eagerness into effective military use.

Ryan is proud of its contribution in Asia and Australia toward this end. Widely used for training military pilots for the U. S. Army Air Forces, Ryan planes were in China and

the Netherlands East Indies in training operations before the war. Now Ryan planes are doing their full share in important military assignments for China and in Australia and India. Of course, details of these military assignments cannot now be published.

TO STRIKE HARDER BLOWS

In addition to other vital war work, Ryan activities now include the engineering development and manufacture of advanced type combatant airplanes and important assemblies for the armed services. Into these is going knowledge that will make Ryan peace-time planes and other products safer, more useful and more economical.

RYAN

Rely on Ryan to Build Well



**RYAN
BUILDS WELL**
Ryan construction, proven in aviation's pioneer days, now proven in war, will tomorrow produce safer, more useful peace-time aircraft.



**RYAN
TRAIN WELL**
Ryan School of Aeronautics, famous peace-time air school, now training fine U. S. Army pilots, follows one creed: Thoroughness.



**RYAN
PLANS WELL**
Modern engineering + flying experience. Typical result: Ryan exhaust manifold systems are now used on the finest planes of other manufacturers.

RYAN AERONAUTICAL COMPANY, SAN DIEGO— MEMBER, AIRCRAFT WAR PRODUCTION COUNCIL, INC.

Ryan Products: Army PT-22s; Navy NR-1s; Army PT-25s; S-T Commercial and Military Trainers; Exhaust Manifold Systems and Bomber Assemblies.

REA President Warns Public of 'Inexpert' Air Cargo Data

Says Realism and Experience Must Temper Future Ideas

(The following article has been written exclusively for American Aviation by Mr. L. O. Head, president of Railway Express Agency. This marks the first time that REA has answered what Mr. Head terms "uninformed theorists"—Ed. note.)

A GREAT DEAL of information, much of it erroneous, has been given to the public lately about the enormous development in the transportation of property by air during the postwar period. Much of it seems to emanate from uninformed theorists rather than from practical far-visioned men of varied transportation experience.

Many of our customers who, intentionally or otherwise, have been misled have naturally sought our views. We who

have a genuine and friendly interest in the development of air transportation believe that much of this inexpert discussion may retard rather than help such development.

Railway Express is the one organization, which for years has been and is now con-

ducting the Air Express business on all of the nation's airlines. We have also materially aided in the development of International Air Express service. We have an Air Express Division officered by men of wide transportation experience, who for more than sixteen years have been engaged in the development, handling and publicizing of Air Express. This experience makes their opinions especially valuable. In these conclusions, I have drawn upon this experience and the extensive research we have carried on during all of that time and from that I believe we can determine the reasonable possibilities of the immediate post-war future.

As early as 1919, the express organization became actively interested in the possibilities of commercial air transport and experimented with it. But it was not until 1927, when regularly scheduled air service across the nation was inaugurated, that air express service could be established. On September 1 of that year, our Air Express Division was formed and has been continuously operated since that time.

From the beginning with only a few airport cities, Air Express was made available to all of our customers throughout the country, thus a shipment could

be forwarded under a single express receipt between any two points in the United States providing a fully coordinated and integrated air and rail service, as required. As the air industry expanded, due in part to the growth of airport facilities, increase in number of operating air companies and service to wider areas, this single responsibility in the handling of Air Express became of increasing importance to the commercial and industrial life of the nation.

Public acceptance of this excellent service, with overnight shipping facilities coast to coast is evidenced in the following statistics of number of shipments, tonnage and gross revenue.

	Number of Shipments	Weight pounds	Gross Revenue
1928	17,006	\$130,773.29
1933	68,683	404,640
1938	715,410	4,726,567
1939	870,806	5,850,569
1940	1,078,189	7,699,772
1941	1,306,628	11,240,204
1942	1,405,320	21,704,323
*1943	1,559,495	31,066,414
			11,011,321.87

*Partly estimated.

Our interest in the future development of Air Express was plainly indicated in the extensive customer survey we made before the war. More than 93,000 of our customers were personally interviewed in order that we might learn the extent to which we should expand our Air Express service to meet their transportation requirements. Our inquiry also undertook to develop the level of rates that would permit them to move their various commodities in Air Express service. We have been serving most of these customers for generations; they have confidence in our service and in our resourcefulness in meeting their future transportation needs.

Costs Unknown

The war has produced many technological developments in the aircraft industry; larger and faster planes are carrying great loads long distances—but not in common carrier operation. Airplane manufacturers envision great ships of the air and say that these will bring substantial reductions in operating costs, but all of this must be largely conjecture until the war ends. What operating costs will prevail in the postwar period cannot be determined now with any degree of accuracy. It is likewise impossible at the present to identify the types of traffic that can move at rates higher than those for surface transportation.

We find that many of these long-time customers are now in war production, but in their postwar planning they contemplate enlarging their output and variety of products. But they insist that mass production, under our national economy, is the basis for the lowest possible selling price to the consumer. They point out that this requires a holding or warehousing period in the process of distribution and marketing, chiefly so that transportation costs may be held to the minimum. In their opinion, these uncertainties as to the future costs of air transportation must be removed before they

can determine, in any definite way, the extent to which they will need to expand their use of Air Express after the war. I feel that any future expansion in air express traffic should not adversely affect the orderly processes of marketing and distribution, which are vital elements in our national economy.

In return, they asked us two pointed questions:

1. What are Air Express rates going to be in the postwar period?

2. Are we going to be deprived of any of the advantages of your nation-wide completely coordinated and integrated air-rail service?

As to the first question, diligent study of developments in aviation indicates such a wide difference of opinion as to costs involved in air transport service after peace comes that this question cannot be satisfactorily answered at this time. There is no settled cost basis by which any shipper or receiver can determine now what portion of his traffic can be moved by air in the postwar period. Until some degree of exactness is achieved in the matter of rates and charges, the continued forecastings of what can and will be moved by Air Express are not constructive and do more harm than good.

The answer to the second question, so frequently put to us, as to the future place of Air Express and Air-Rail services of this company, can only come from the public authorities controlling such matters. I have in mind the Civil Aeronautics Board and the Congress. That is something in which the public interest is of great importance and that interest should be protected. No one organization can serve the public, as we have done for more than a century, without creating a customer interest that cannot be denied.

Harmonious Relationship

Our Air Express service has developed from a contractual relationship with the air transport companies which provides the greatest possible convenience and availability to the public. For more than sixteen years that contractual relationship has been and is now a harmonious one. Some of the theorists would have the public believe that our Air Express division is decadent and unable to cope with the transportation demands of tomorrow and that the airlines should, therefore, break off this arrangement, substituting they know not what. They seem to have little regard for the public interest which is paramount.

I want to point out that these uninformed statements and obstructive articles do not originate with our airline friends, who are our partners in this enterprise. Others find nothing wrong with our handling of Air Express, except that Railway Express is railroad owned. In making this criticism, they frequently use the word "dominated" by the railroads, which is not the fact. We have consistently pursued a policy of aggressively and intelligently promoting the transportation of property by air and intend to continue to do so in the future. That, I think, is a full answer to these assertions.

We are convinced that the greatest advantages to the public will flow from a unified operation as conducted by our Air Express Division. We know that the consolidation of all of the old express companies in World War I and its continuation thereafter greatly improved the express service, accomplishing elimination

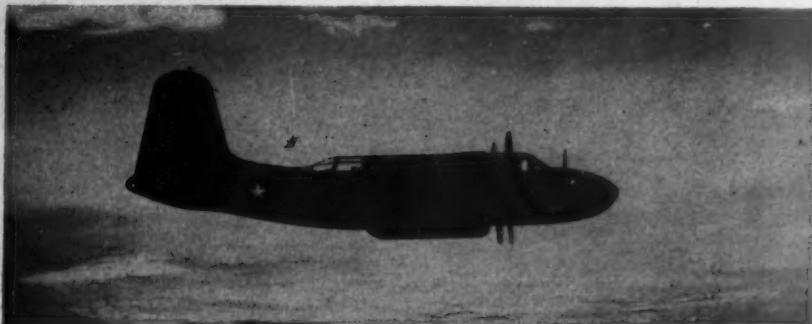
(Turn page)



Head

AN
WELL
Engineering experience.
Satisfied: Ryan
airplane
used as
factories.
L. INC.
semblies.

First Picture of P-70 Night Fighter



This is the first picture to be released of the Douglas P-70 on a flight over the West Coast. A closely guarded secret for more than a year, the P-70 is an adaptation of the Douglas A-20 attack-bomber. It carries four 20 mm cannons in its belly.

REA President

(Continued from preceding page)

of duplicate facilities, vehicle services and other departments, and thus made possible maintenance of lower rates than could otherwise have been offered to the shipping public. The reverse of that as to Air Express service is definitely not in the public interest. The common bond that has joined air express and rail express under a single responsibility is indispensable to a dependable, expeditious and flexible transportation service.

In planning for the future, especially in the field of commercial air transport, it would seem shortsighted to overlook the gathering power of this nation-wide organization with a fleet of more than 15,000 motor vehicles, 60,000 employees and 23,000 places of business. It provides the single responsibility in transportation so necessary for the convenience and security of shippers. I know of no other organization that maintains so intimate daily contact with the shipping public as does ours.

The most useful contribution to post-war aviation progress that Railway Express Agency with its 105 years of "know how" can make at this time is to see that Air Express users of today and tomorrow are kept fully informed of current developments so that they can take whatever steps may be necessary in their own interests. Imaginative thinking on the part of all of the real friends of air transport is necessary, but it must be tempered with realism and experience. This it will be our purpose to do in planning for Air Express in the postwar period.

List of Exhibitors Grows

The list of exhibitors for the Northwest Aviation Exposition, scheduled for Minneapolis March 25 to April 1, continued to grow last week and indications were that the exposition would be one of the most successful ever staged in connection with the aviation industry. In a letter to prospective exhibitors, H. H. Cory, show manager, expressed the hope that postwar planning ideas advanced at the convention sessions to be held in conjunction with the exposition "will be of inestimable value."

Dr. Lewis Honored

Dr. George W. Lewis, Director of Aeronautical Research, National Advisory Committee for Aeronautics, has been awarded an honorary doctor of engineering degree by Illinois Institute of Technology. The citation was "for outstanding achievement in advancing our knowledge of the fundamental principles and practices of mechanical flight; and for leadership and encouragement of practical research by government agencies in cooperation with industry—researches which have insured a solid technical foundation for the greatest aircraft production program in history."

Focke-Wulf 190, Seized Intact, Gives Materiel Command Valuable Information

Captured on an airstrip near Naples, a German Focke-Wulf 190 has been brought to this country by the Army Air Forces and is now undergoing tests by the Materiel Command at Wright Field, Dayton, Ohio, the War Department announced today.

The long-range fighter plane, modified for bombing by the Nazis, was seized by American forces intact except for one hole through the engine stacks and one through the wing. Nazi mechanics were apparently unable to repair it in time for evacuation when Allied forces moved across southern Italy.

Crated, the plane was shipped to Naples and thence to Wright Field. Seven days after its arrival it was ready for its initial flight with an AAF pilot at the controls.

A prime feature of the plane is the wide use of electric controls. There is no mixture control. This is taken care of automatically. The familiar hydraulic pressure gauge is missing; it has no hydraulic system, the wheels and flaps being operated electrically. It is one of the few airplanes which uses electric control operating mechanisms to a large extent.

The FW-190 is powered by a BMW (Bavarian Motor Works) engine of the 14-cylinder, 2-row radial type, rated at approximately 1,600 horsepower.

Vinson Will Oppose Unified Command

Chairman Carl Vinson (D., Ga.) of House Naval Affairs Committee reported to American Aviation that he would oppose the creation of a unified command or any other major reorganizational change in the military set-up during the war, following the publication of a front-page story in the *Washington Post* announcing that such unification was imminent.

Vinson's statement is in line with the President's statement in a letter to Sen. Pat McCarran (D., Nev.) that "any drastic change in the over-all organization of the military and naval forces at a time when we are bending every effort toward bringing the war to a rapid conclusion might result in serious disruption of the war effort." (*American Aviation*, October 1).

Vinson throughout the years has consistently opposed all measures creating a separate air force and propounded the "Navy" theory that aviation is a "complement" to the ground and sea forces. The most widely accepted plan for unification of the military services would entail the placing of the air arm on an equal status with naval and ground forces.

However, Congressional proponents of a unified command support Vinson's position that there should be no major reorganization of the military during the war.

Rep. John M. Costello (*American Aviation*, February 1), high-ranking member of House Military Affairs Committee, who has advocated a unified command since the Navy embarked on its large-scale land-based aviation program, thus duplicating the program of the Army Air Forces, nevertheless has qualified that the time for the reorganization is "after" the war.

The plane weighs approximately 10,000 pounds and has a wing span of 34½ feet. It resembles the AAF P-47 in flight.

Carrying two wing-tanks, the FW-190 has a long range. Standard practice of the Nazis calls for two wing-tanks with a bomb carried on a rack beneath the fuselage.

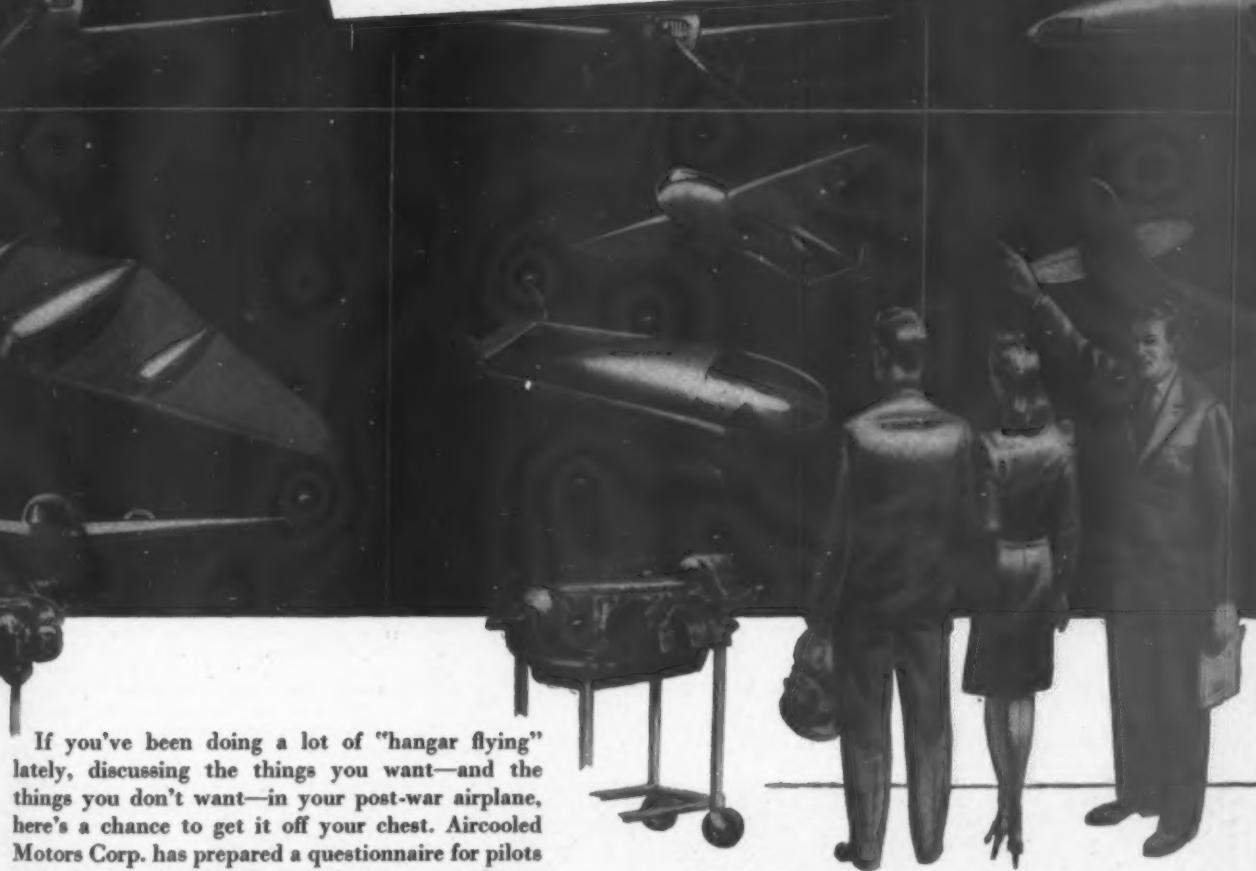
Cooling of the radial engine is aided by a power-driven rotary fan geared to the propeller hub. This aids in forcing air back over the cylinder fins.

Two shell-firing cannon are built into the wing roots and are electrically synchronized to fire through the propeller arc. In contrast, the regular fighter model of the FW-190 carries four cannon and two 7.9 machine guns.

The FW-190 was originally intended for use as a fighter. Its modification by the Germans has entailed numerous structural changes. This modified version under test by the Materiel Command was probably built in 1943. It is model 190-A4U8, the number indicating its designation for fighter-bomber and the U8 meaning modification number 8.

It has been described as somewhat of a counterpart of the AAF's P-39s, P-40s and A-36s, and a plane that must not be underrated.

An Invitation to tell us what You want in Your post-war plane



If you've been doing a lot of "hangar flying" lately, discussing the things you want—and the things you don't want—in your post-war airplane, here's a chance to get it off your chest. Aircooled Motors Corp. has prepared a questionnaire for pilots and other air-minded folks, which gives you a chance to be specific about the features you want. It's fun to fill in, and we're sure the things you tell us will help us make better Franklin engines. They'll help make better planes, too. For when all the questionnaires are in, the results will be made available to every manufacturer of light planes in the country.

Here's all you do. Fill in and mail the coupon below, or drop us a post-card or letter, saying "I want a copy of your post-war plane questionnaire." We'll send it promptly—no charge, no obligation. Write for your copy today. Address:

Franklin

AIRCOOLED MOTORS CORP.
SYRACUSE 8, N. Y.

Send me a copy of your post-war plane questionnaire.

Name _____

Street _____

City _____ State _____



ion

10,000
feet.

t.

"W-190

rice of

s with

th the

aided

red to

forcing

lt into

y syn-

opeller

model

on and

led for

by the

struc-

version

and was

el 190-

desig-

the U.S.

hat of

P-40s

not be

944

British Designer Proposes 75-Ton Postwar Cargo Plane

A BRITISH DESIGNER has plans for a postwar six-motored 75-ton air cargo plane which would be capable of transporting 42,700 lbs. payload over a distance of 1,650 miles at an average speed of 269 miles per hour (70% maximum power).

According to *The Aeroplane*, British aeronautical magazine, A. A. Bage, chief designer of Percival Aircraft Ltd., is the author of the plan. The publication terms it "an interesting theoretical project . . . prepared in his spare time."

Bage, the article states, has resorted to the aerofoil form of center fuselage which was originated under the Burnelli patents. "This layout seems to offer great promise as an alternative to the tailless type of large aeroplane."

Powered by six 2,500-hp motors, the huge craft would be entirely constructed of wood, "full advantage being taken of the latest development in synthetic resins, both as a joining medium and for the production of reinforced wood. It is maintained that a more efficient structure can be obtained by this process than through the use of metal, the weather-resisting properties being approximately the same."

The plane's wing consists of five portions: the center section of 60 ft. chord and 30 ft. width with an average height of 10 ft. from the main freight cabin; a port and starboard tapered section, which forms the connecting link between the center section and the outer plane; and a port and starboard outer wing of conventional design with a 22-ft. chord at the root tapering to 11-ft. chord at the tip.

A tricycle undercarriage gives the plane the horizontal position helpful in loading large loads of cargo.

Forward of the front spar two bulkheads form the main structure of the pilot and crew's cabin. On each side of these bulkheads the nose portion is floored in to provide additional passenger or cargo space.

Altogether, total floor area available for cargo is approximately 950 sq. ft. and the total capacity 7,600 cubic ft. Of this, 650 sq. ft., or 5,800 cubic ft., is contained in the main cabin, with only two vertical posts obstructing the floor.

Cargo, it is said, can be easily handled and located in any desired position by means of an overhead rail carrying a traveling block and tackle.

Tail booms are attached to the back of the rear spar, and tail ribs form the trailing portion of the center section between these tail booms. A portion 10 ft. in width of the lower surface of the trailing portion is hinged at the rear spar and can be lowered by means of hydraulic jacks to form a ramp for ease in the loading of freight. Alternatively, where it is more convenient to load direct from a truck, the ramp is left in the closed position and an eight-foot square hatch is opened in its place.

If this plane were in use today, it is said that it could carry 125 fully-equipped men, 25 Bren guns, 100 boxes of ammunition and 250 hand grenades (total weight of 38,100 lbs.) and deliver them 1,980 miles in six and one-half hours. As another example, it could transport six jeeps, 12½ gallons of gasoline for each jeep, 36 men with equipment, three 50-gal. drums of gasoline, one 10-gal. drum of oil, six Bren guns, and 40 boxes of ammunition (total weight of 27,600 lbs.) a distance of 2,600 miles.

Fully loaded to 150,000 lbs., the plane would have top speed of 328 miles per hour, full take-off power being available up to 4,500 ft. At 50% maximum power, cruising speed would be 216 mph, while a cruising speed of 269 mph would be possible at 70% power, and 295 mph at 83% power. Landing speed, flaps down, would be about 83 mph, and it is claimed that the ship would come to a stop 500 yards from "touch down."

To Discuss Air Safety in N. Y.

Prevention of accidents in aviation operations is to be discussed at the 15th Annual Safety Convention and Exposition of the Greater New York Safety Council to be held March 28-30 in Hotel Pennsylvania, New York. An aircraft manufacturing session is scheduled for March 29. A special session on aviation operation is scheduled for March 30.

2-Engined Fighter Scheduled

A two-engined fighter plane, being built for the Navy by the Grumman Aircraft Corp., "is scheduled for early production," the Truman Committee report disclosed last fortnight. This plane (PTF) is the first multi-engined fighter designed for the Navy. Another new addition to the Navy's air arm is the Douglas BTD dive bomber, which is replacing the Douglas "Dauntless" (SBD), the report said. The new single-engined plane was described as "a radically improved model for carrier operation."

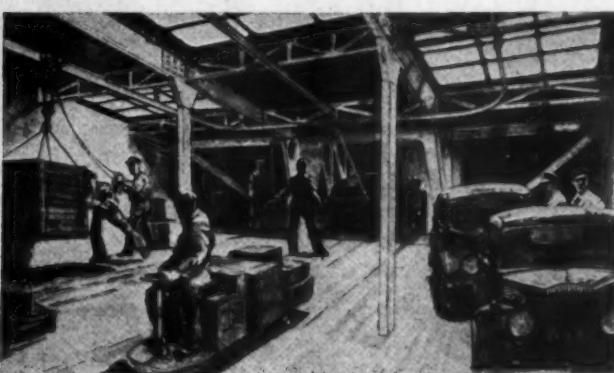
New Bill Would Give Maritime Commission Role in CAB Hearings

House Merchant Marine and Fisheries Committeemen are preparing to introduce legislation which would authorize the Maritime Commission to intercede in proceedings before the Civil Aeronautics Board on behalf of shipping lines seeking certificates to operate air lines.

The legislation, it was understood, would authorize the Maritime Commission to present a "finding" to the CAB, would have the effect of making section 408 of the Civil Aeronautics Act inapplicable, but would require shipping lines to prove a case of "public convenience and necessity" to the satisfaction of the Board. (Sec. 408 generally prevents ship and air operations by the same firm on the grounds that competition between two different media of transportation is eliminated.)

The legislation was expected to go to House Merchant Marine and Fisheries Committee which is known generally to favor such a bill.

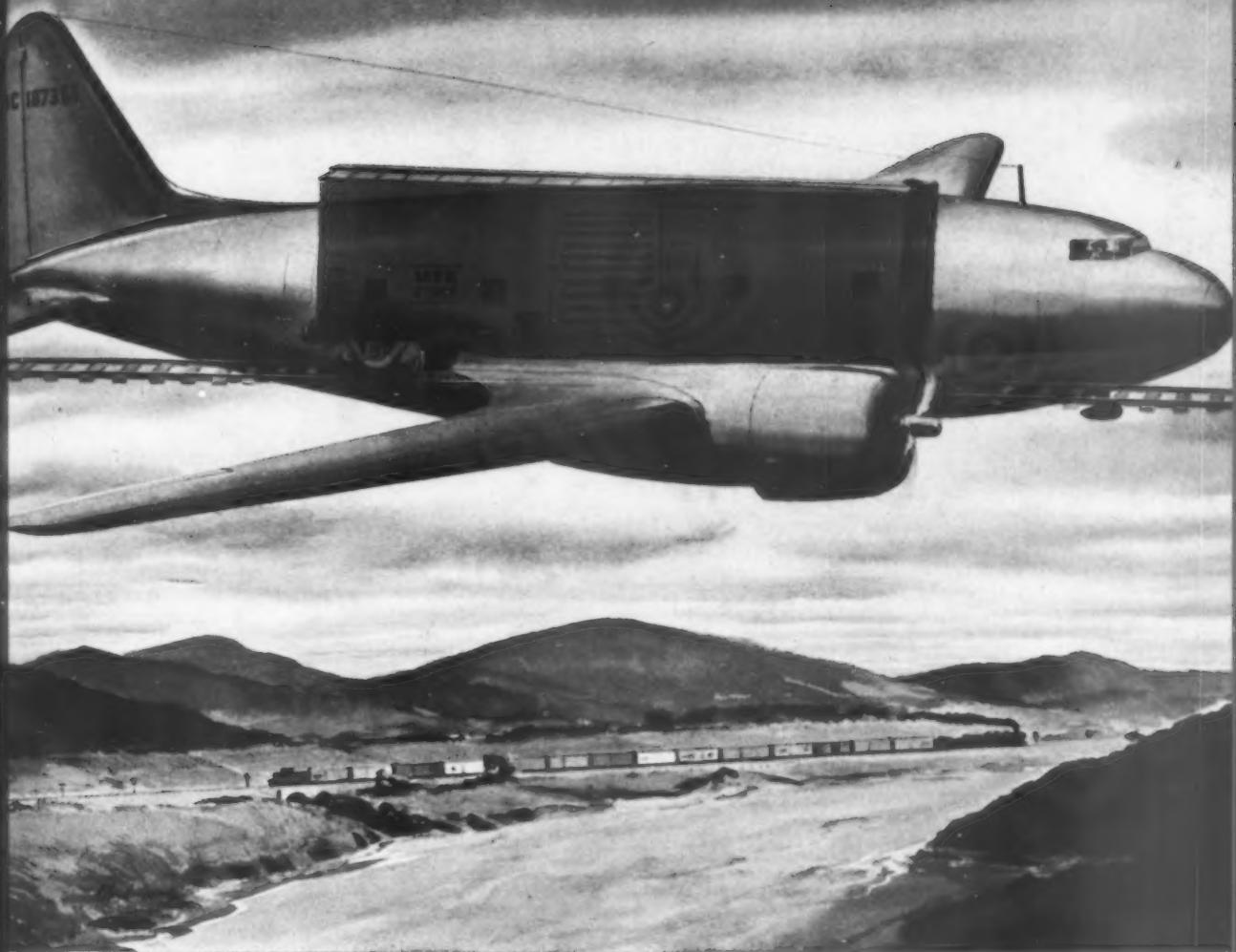
However, a group of Interstate and Foreign Commerce Committeemen who have been watching for some time for this legislation can be expected to make a concerted drive to block it, on the grounds that their Committee has jurisdiction over all matters concerning the Civil Aeronautics Board.



Shown above, on the left, is an artist's conception of the interior of the air cargo plane proposed by A. A. Bage. Figures have been drawn to scale. Included in the cargo being loaded are automobiles for export and heavy and light merchandise. In the background a car is seen driving up the ramp under its own power. Overhead is the



loading rail. Illumination is provided by Perspex skylights. The two recesses in the background with diagonal struts are the front ends of the box tail booms. The drawing on the right shows a general view of the giant ship. Both drawings were made by *The Aeroplane*, British aeronautical magazine.



Today's military flying freight car available for tomorrow's air commerce

The world's endless horizons are the only limits of tomorrow's air commerce. Curtiss Commandos—will ply peace-time skies making possible new standards of living for the people of the world.

Now being service-tested in the most rigorous of military duty, they are daily hauling men and supplies to our far-flung battle fields. A 3½ ton tractor . . . a gasoline tank-truck . . . two cumbersome dynamos . . . odd jobs and heavy ones but Commandos got them there on time.

Their 2755 cubic foot cargo capacity exceeds that of a 36 foot freight car. They are freight cars of the air. They can lug a useful load of 9 tons at cruising speeds in excess of 200 MPH.

The spacious cargo compartments of the Commando will bring the commerce of the world to your doorstep. When peace comes—LOOK TO THE SKIES, AMERICA! Curtiss-Wright Corporation, Airplane Division, Buffalo, N. Y.; St. Louis, Missouri; Columbus, Ohio; Louisville, Ky.

MEMBER, AIRCRAFT WAR PRODUCTION COUNCIL, EAST COAST, INC.





2,000,000—All-Americans

Today, not eleven men but more than two million make up the greatest All-American team in history. They are the flyers and ground crews of the U. S. Army Air Forces—and instead of a gold football on their watch chains, they wear the Army Air Forces' winged insignia.

On every play to date, these boys have strafed gaping holes in the enemy lines allowing our ground forces to get through for immeasurable gains. Their passes over the Reichland are causing panic. The only "spinner" they think of is a Zero crashing in flames.

Bell Aircraft is proud of its three-way role in helping to equip this greatest of All-American teams. Our Niagara

Frontier Division has produced thousands of Bell Airacobras that have wrought havoc with the enemy on many fronts. Today, this division is also building a new type of fighter plane with even greater performance and before long, it *too* will be in the scrimmage. Our Ordnance Division in Burlington,

Vt., is working night and day building the flexible gun mounts which give the boys in the turrets the accuracy of firepower that is knocking the enemy out of the skies at a terrific rate.

And soon, from the new Bell Bomber Plant in Georgia, will come more planes to help speed the day of victory.

Some day, soon we hope, this team will be returning to its home grounds. And when it does, it will find Bell Aircraft pioneering in building equipment for a peacetime nation on wings. © Bell Aircraft Corporation.

MEMBER AIRCRAFT WAR PRODUCTION COUNCIL—EAST COAST, INC.

BELL AIRCRAFT
PACEMAKER OF AVIATION PROGRESS

Niagara Frontier Division, Buffalo and Niagara Falls, N. Y.
Ordnance Division, Burlington, Vt.
Georgia Division, Marietta, Ga.

Canada to Finance Airports On Northwest Rt. to Alaska

ALL THE WORK done on the airdromes and intermediary fields in the northwest staging route from Edmonton to Alaska and the route on Canadian property will be paid for by Canada, C. D. Howe, Minister of Munitions, has announced. Expenditures made by the United States on construction of a permanent nature on all air routes in the northwest district will be reimbursed.

This arrangement includes all improvements made on the flying fields and strips on the Mackenzie River route as well. Total cost of the Alaska staging route will be about \$46,000,000; and of all airways development, about \$58,500,000.

"In arranging for the postwar use of the northwest staging route, the Government of Canada will pursue a liberal policy of cooperation with other nations," Howe assured. "We hope the right to use the route will become part of a general scheme of international cooperation in air transport matters which will provide greater freedom of movement of aircraft and air traffic within a suitable international framework."

The Financial Post of Canada, commenting upon the action, declares that Canada definitely favors the multilateral plan. It also states that there is no desire to put a fence around Canadian airdromes. "On the other hand," it states, "there is a very strong desire to retain full and unchallenged control of facilities on Canadian territory. A certain amount of wariness has been created here by loose talk of some Americans, who want full control of everything built with American money. It is recognized that this attitude is not held by Washington officials, but it is also recognized that another Congress might be in office after November next. Ottawa is taking care now that we have U. S. dollars to spare, that no American money will be tied up in any Canadian airway base or facility."

Wings Club Plans First Annual Dinner in N. Y.

First annual dinner of the Wings Club will be held at the Waldorf-Astoria Hotel on March 22. J. Carroll Cone, president, will preside. C. S. (Casey) Jones will be toastmaster.

Banquet sponsors are listed as: Robert A. Lovett, Assistant Secretary of War for Air; Artemus L. Gates, Assistant Secretary of Navy for Air; General Henry H. Arnold, Commanding General, U. S. Army Air Forces; Maj. Gen. Follett Bradley, AAF; L. Welch Pogue, chairman, Civil Aeronautics Board; Charles I. Stanton, Civil Aeronautics Administrator; Col. F. Trubee Davidson, AAF; Dr. Jerome C. Hunsaker, chairman, National Advisory Committee for Aeronautics; Fiorella H. La Guardia, Mayor, City of New York; Glenn L. Martin; Donald W. Douglas; Igor I. Sikorsky and Carl B. Squier.

Principal speaker will be Captain Eddie Rickenbacker who will speak on "Fighting Men on Fighting Fronts." Three minute talks will also be given by prominent aviation authorities.

CAP League Formed: Name Beck Chairman

Formation of a Civil Air Patrol League, a non-profit, non-partisan organization designed to furnish a field of training and activity for 15 to 18-year-olds interested in aviation, was announced Mar. 1 at an Aviation Writers Association luncheon in New York by Thomas H. Beck, president of Crowell-Collier Publishing Co.

The organization, which Beck said has the support of Gen. H. H. Arnold, Commanding General, Army Air Forces, will be financed by dues graded by membership classification. It will be established on a nine-region basis, each region headed by a vice president.

Beck will serve as chairman of CAPL, and president is Frank Tichenor, publisher of *Aero Digest*. Vice presidents of the regions have not been named. The League will have no official connection with the Army Air Forces, it was said.

Idea of CAPL resulted from the experience of CAP's Cadet Training Corps. Lieut. Col. Earle Johnson, CAP national commander, told the aviation writers that more than 60,000 cadets are enrolled in the program. Col. Johnson also stated that 90,000 men and women have joined CAP and less than 500 have resigned.

McCormick Named

With a background of study based on the approximately 1,000 cases which pass through Detroit's traffic court daily, Malcolm Y. McCormick, psychologist, has been appointed to the Medical Division of the Civil Aeronautics Administration for the purpose of analyzing the medical record of pilots in relation to accidents. CAA has approximately 500,000 medical records of pilots on file and new examinations are being made at the rate of approximately 200,000 a year.

Attend Airport Managers Meeting



Among those present at the Airport Managers Meeting at Ft. Wayne, Ind., last month were, left to right, John Groves, director of operations, Air Transport Association; Louis R. Inwood, executive assistant, TWA; Robert Schott, manager of Smith Municipal Airport, Ft. Wayne, and chairman of the meeting; Charles I. Stanton, Administrator of Civil Aeronautics, and J. Kirk Baldwin, CAA's airport management consultant.

All-Out Production of Combat Planes Begins; No More Trainers

AIRCRAFT PRODUCTION this month clearly passed the preparatory stage, began all-out combat production only. The passage of this first phase was clearly marked by the War Department's announcement that all orders for training planes had been cancelled.

First announcement of large scale cutbacks in production of training planes early in January was followed on Feb. 29 by complete termination. "The need of the Army Air Forces for training planes has been met," the Army explained, "and termination of existing contracts for such aircraft has been ordered to insure use of the workers involved in the construction of combat craft."

Three prime contractors are affected by the cancellation, but all will be given new contracts for combat type planes and parts. The manufacturers are: Consolidated-Vultee at Nashville, Tenn. and Downey, Calif.; Aeronca at Middletown, O.; and Fairchild Aviation Corp. at Hagerstown, Md.

The actual end of trainer plane production will not come for three to six months in these plants. Richard S. Boutelle, vice president and general manager of Fairchild said the Hagerstown plant might even be called on to continue production of spare parts beyond that time. The Army Air Forces said that there would be on hand after termination, a quantity of incompletely fabricated parts, the bulk of which will be absorbed as spares in maintenance of present trainer planes.

"Termination of the training plane contracts by the AAF will enable workers and the plants involved to support the war effort more effectively in its present phase by helping to meet combat plane require-

ments," the Army asserted. They anticipate full utilization of all workers on combat planes projects because of the demand created by the increased tempo of production.

At Fairchild, Boutelle believes, demand for the company's planes will keep the complete personnel and facilities occupied for the duration. Besides the PT-19 which is being cancelled, Fairchild produces the AT-21, UC-61-A "Forwarder," a utility cargo and personnel transport plane, wing panels and controls for bombers, and construction has begun on a new long-range cargo plane, C-82, which is expected to go into production soon.

Boutelle stated that Fairchild had anticipated the conversion from training to combat models and a gradual changeover had been in process at Hagerstown for some time. Other aircraft manufacturers expressed the hope that future cancellations of any group of plane-types or individual models would be as well forewarned as the termination of trainer plane production.

Commenting on the cancellation of trainer contracts and its effect upon the Vultee Field Division of Convair at Downey, Cal., Brig. Gen. Donald F. Stace, supervisor of Western Procurement District, AAF, stated: "This cutback has been under consideration for some time and plans are already in effect to use the manpower and facilities at Vultee Field in building components to augment the accelerated program for combat types of aircraft." The plant has been in production on B-24 components and is tooling for a major part in the P-38 program.

CAA Estimates 60 Days Needed to Finish Plans For 31 'WPA' Airports'

The Civil Aeronautics Administration estimates that another 60 days will be required before surveys, plans and specifications will be completed covering the project to finish the building of some 31 so-called WPA airports. This program is provided for in a \$9,907,890 appropriation bill passed by Congress last year.

The surveys are being made whenever the work can be done without interfering with CAA's regular construction program, a CAA spokesman stated.

As soon as individual surveys have been completed and the plans and specifications have been prepared, CAA will submit the projects to the War Production Board to pass on the critical materials involved and to the War Manpower Commission for the manpower needed.

Twenty-four of the projects were in the original group approved by CAA and recommended for completion. The Budget Bureau disapproved the project as not being in accord with the President's program. Congress not only authorized the completion of the 24 airports approved by CAA but added seven more which CAA had not approved.

CAA, working with the War and Navy departments, has been building many airports under the Airport Development

Florida State Aviation Committee Organized

The Florida State Aviation Committee, appointed by Governor Holland on the recommendation of the 1943 House of Representatives, has held its first organizational meeting in Tallahassee.

Rep. Goodwin M. Nilsson of DeLand was elected chairman and V. J. Oberhauer, Jr., of Jacksonville, secretary. The committee appointed W. B. Haggerty of Tampa a member after hearing the Governor declare that its activities must be of statewide interest and all communities must be considered in the program.

Other members who attended the organization meeting were Senator Wallace E. Sturgis, Arthur Corry, Charles M. Moon, representing Eastern Air Lines, and MacDonald Bryan, representing National Airlines.

In urging the committee to plan for all possibilities of postwar advancement of aviation, Governor Holland said: "Florida is sitting in the most advantageous position for aviation of any area in the nation."

Landing Areas National Defense Act of 1940. These ports were located by CAA with the idea of their utilization in peacetime aviation while at the same time satisfying the wartime military needs.

Guggenheim Medal Won

By Allen Posthumously

The Guggenheim Medal for 1943 has been awarded posthumously to Edmund

Turney Allen "for major contributions to aeronautics leading to important advances in airplane design, flight research, and airline operation . . ." Allen, a well known test pilot, was killed Feb. 18, 1943 in the crash of a new Army bomber which he was testing. He previously had been given the Octave Chanute Award by the Institute of the Aeronautical Sciences. He delivered the Wright Brothers lecture in New York on Dec. 17, 1942.



Allen

Dodge Heads War Contracts Price Adjustment Board

Joseph M. Dodge, chairman of War Department's Price Adjustment Board, has been appointed chairman of the new War Contracts Price Adjustment Board, created by the renegotiation section of the Revenue Act of 1943. The new Board has authority over renegotiation of all war contracts after June 30, 1943, continuing the work of the Joint Price Adjustment Board whose authority applies to war contractors' fiscal years ended before July 1, 1943.

Other members of the new Board include: Laird Bell, Navy PAB, vice chairman; Commander Arthur G. Rydstrom, Maritime and War Shipping; Capt. Harry C. Maull, Jr., Treasury; Charles T. Fisher, Jr., Reconstruction Finance Corp., and Carman G. Blough, WPB.

All legal authority on renegotiation is lodged in the War Contracts Board, which among other things has the responsibility for fixing policies, principles, interpretations and procedures. As provided by Congress, the War Contracts Board has delegated certain of the authorities conferred on it by Congress to the heads of the various governmental agencies that have been administering renegotiation of war contracts, continuing the actual conduct of renegotiation through the organizations with which the contractors are familiar.

Regulations regarding the filling of financial and other data by each war contractor, made mandatory by the new law, are under the direction of the new War Contracts Board, which approved a "Standard Form of Contractor's Report" for filing information to make it possible to determine whether or not renegotiation should be initiated with the contractor.

'Aviation Associates' Formed

Aviation Associates has been formed in Chicago "for the purpose of rendering a general consulting, research, and survey service to the aviation industry." V. C. Rasmussen is head of the new firm.

ously
43 has
ndmund
n "for
tributary
ronauts
to im-
avances
design,
research,
oper-
Allen,
own test
killed
943 in
of a new
mber
as test.
previ-
chute
nautical
Wright
in Dec.



NOW—CLIPPER AIR CHEQUES

A great new convenience for international air travelers

Today's high-speed international air travel, and the increasing complexity of wartime currency restrictions, have created a need for an instrument of exchange in small denominations.

* * *

To meet this need, Pan American has scored another service "first." Created by Pan American World Airways, in co-operation with the American Express Company, the *Clipper Air Cheques* provide a "universal air currency"—a source of readily converted money for local needs at in-transit and over-night stops on America's foreign air routes.

The small denominations of these Cheques make it unnecessary, as a rule, to carry the currency of one country into another (where it may not be spendable or easy to exchange

without undue loss). *Clipper Air Cheques*—in short—admirably supplement the convenience and protection of regular Travelers Cheques carried by passengers for general purposes.

The new *Clipper Air Cheques* can be purchased and cashed throughout the world—at any sales office of Pan American World Airways, the American Express Company and various authorized Pan American Agents. Each *Clipper Air Cheque* book contains \$50.00 worth of Cheques—ten \$1.00 Cheques and eight \$5.00 Cheques. Only a single signature, on the book cover, is required at time of purchase—and only a single signature on each Cheque, at time of cashing.

Although conceived in wartime, *Clipper Air Cheques* possess advantages which will carry over into peacetime, making them highly useful to the vastly multiplied number of international air travelers envisioned by Pan American when peace comes.

Whenever you plan to travel by air to any foreign country, it will pay you to investigate Clipper service—and the convenience of the new *Clipper Air Cheques*.

CLIPPER AIR CHEQUES ON SALE MARCH 31st

PAN AMERICAN WORLD AIRWAYS
The System of the CLIPPERS

Interdepartmental Shipping Group May Consider Air Rights

AN INTERDEPARTMENTAL Shipping Committee, formed without public announcement about two months ago on the initiative of the State Dept. to prepare recommendations for the postwar merchant marine, is expected to decide at an early session whether or not to take up the issue of air rights for shipping companies.

The purpose of the Committee is to draw up recommendations to be used as a basis for international shipping negotiations, which the President indicated in his Budget message to Congress would follow upon the heels of international air discussions.

While it is reported that a group of men on the Committee who have publicly recommended that overseas shipping firms be given air rights are advocating that the Committee include this matter in its field, it is understood that the State Dept. looks askance at examining a "domestic" issue. State Dept. spokesmen view the question of whether or not shipping firms are to be allowed to extensively operate aircraft as purely a matter of "domestic" policy.

On the other hand, other members of the Committee feel that this "domestic" policy is so closely related to foreign policy that it should be included in any survey of overseas shipping.

Rear Admiral Emory S. Land, Rep. Richard Welch (R., Cal.), and Rep. J. Hardin Peterson (D., Fla.)—all members of the Interdepartmental Shipping Committee—are urging that the group cover air rights for shippers in drawing up its recommendations, it is reported.

The Committee was not set up by the President, as was the Interdepartmental Aviation Committee. Although the membership of the Committee has not been released, it has been reported that it includes the following:

Rep. Richard J. Welch (D., Cal.) ranking Republican member of House Merchant Marine and Fisheries Committee; Rep. J. Hardin Peterson (D., Fla.), member of House Merchant Marine and Fisheries (The Committee's chairman, Rep. Schuyler Otis Bland, was originally appointed to the post but resigned because of illness); Sen. Scott Lucas (D., Ill.); J. E. Saugstad, acting chief of the State Department's Shipping Division; Paul T. David of the Budget Bureau; Admiral Emory S. Land, chairman of the Maritime Commission and the War Shipping Administration; Brig. Gen. J. M. Franklin, assistant chief of Transportation and Director of Water Activities for the War Department; Rear Admiral W. W. Smith, director of Naval Transportation Service, Navy Department; Vice Admiral R. R. Waesche, Commandant, Coast Guard.

Huntington T. Morse, assistant to Land, and Capt. R. T. Merrill, assistant to Waesche, are participating in the Committee's work. Assistant Secretary of State Dean Acheson attends Committee meetings, but it is not known whether or not he is a member of the group.

This Interdepartmental Shipping Committee, which was very active during the first month and a half of its existence is now more or less standing by, awaiting further expected State Dept. reorganizational changes.

AOPA Newsletter Critical of CAA's 'Compromise Fines'

Criticism of CAA methods in frightening pilots by mentioning heavy civil penalties for alleged infractions of the Civil Air Regulations and then dropping the charges upon payment of smaller compromise fines is contained in the current newsletter entitled, "Cockpit Clatter" published by the Aircraft Owners and Pilots Association.

"Many pilots," the letter states "have suggested that it might more aptly be described as 'sandbagging' in its most obnoxious form. After the mental anguish created by mention of fines in the amounts of thousands of dollars, the average pilot, they argue, is inclined to accept the 'cut rate' offer, thus avoiding expensive litigation. Usually the fine is a nominal figure; high enough to have a nuisance value yet low enough to make impractical the financing of a legal action if the pilot believes the charges unfair or unfounded."

The viewpoint of the Association is described as follows: "AOPA feels that many of these incidents involve unintentional, technical violations of the CAR and that this type of 'pawnbroker' technique is not in the interest of promoting either safety or respect for regulations. It seems indeed another outstanding example of bad regulation and administration; another excellent reason for junking the present CAR."

Hearings Opened on Big Navy Air Budget

House Appropriations Committee began hearings last fortnight on the 1945 fiscal year Navy Department appropriation bill, expected to carry an allocation of \$5,879,-000,000 for the Bureau of Aeronautics.

This is the amount recommended by the Budget.

The Bureau's total, according to the Budget, includes \$4,023,580,000 for the construction of program aircraft and the remainder is for the Bureau's other activities. In addition, the 1945 Budget estimates call for a \$2,800,000,000 contract authorization for the Bureau of Aeronautics.

In the 1944 fiscal year, the Bureau of Aeronautics was appropriated \$2,983,725,-000 (in addition \$250,000,000 appropriated in 1943 continued available) for construction of program aircraft and \$1,600,000,000 for other activities. Contract authorization to the Bureau of Aeronautics for the 1944 fiscal year was \$2,000,000,000.

Budget estimates for the 1945 fiscal year show an increase of \$1,039,855,000 over 1944 fiscal year appropriations for the construction of program aircraft by the Bureau of Aeronautics, and an increase of \$246,420,000 over last year's appropriation for the Bureau's other activities.

Lewin Appointed to Post In ACCA's Traffic Dept.

George F. Lewin recently was appointed assistant to Harry R. Brashear, manager of the Traffic Dept. of the Aeronautical Chamber of Commerce.



Lewin

A native of New Hampshire, Lewin has been assistant Washington representative for the anthracite coal industry, engaged chiefly in traffic and labor relations problems. Following graduation in 1940 with a B. A. degree from Middlebury College, Vt., he joined an insurance firm in Boston and later was with an insurance company in Philadelphia.

Railway Labor Executives Oppose 'Freedom of the Air'

Opposing the freedom of the air doctrine, the Railway Labor Executives Association, meeting in Washington, asserted that such a practice would injure and perhaps destroy standards of American workers in the industry.

Every application of a foreign airline to fly into or over the United States should be separately considered by the government, as at present, the association declared. "Also it is important from our labor point of view that rail carriers as well as domestic airlines, obtain their fair share of international traffic moving across the United States as in the past. For that reason, foreign lines operating to the U. S. should terminate at our regular border ports; domestic lines should be limited to the domestic field; and American international lines should also terminate at our border points."

The association proposed that the Government organize an "American flag line" in which domestic lines would be allowed to participate. This suggestion was prompted by the Association's expressed opposition to any one American private line having a monopoly over foreign commerce.

In addition, the Association went on record for cancellation of all subsidies to transportation, in any form, "to bring about fair and just competitive conditions, and a sound overall transportation system in the public interest."

N. Y. Board of Trade Aviation Section Elects 3

Three prominent New York men recently have been elected to the executive board of the Aviation Section, New York Board of Trade. They are Howard Welch vice president and export manager of the Sperry Gyroscope Co., who was formerly export trade manager for the Studebaker Motor Car and Bendix companies; Gordon C. Sleeper, assistant to the president of Republic Aviation Corp., who will also be chairman of the manufacturers' (aircraft and engines) committee; and Christopher de Groot, U. S. representative of Pan American-Grace (Panagra) Airways.

Stripped for Flight!

This giant machine strips excess steel from the *inside* of Aeroprop propeller blades, thus producing hollow blades of exceptional lightness. This can be done because steel ribs, visible in the blade forgings shown here, provide great structural strength. The resulting combination of lightness and strength is vitally important in combat flying where every useless ounce is a thief of flight efficiency.

The hollow, rib-reinforced steel blade is one of the Aeroprop's many merits. From hub to whirling blade

tip it is engineered to give our pilots every advantage of a *light, strong, and simplified* propeller that is stripped for action.

These same Aeroprop qualities will be prized when the war is won, but the important point today is that Aeroprops are available in greater quantities than needed for the growing armada of Allied aerial might.

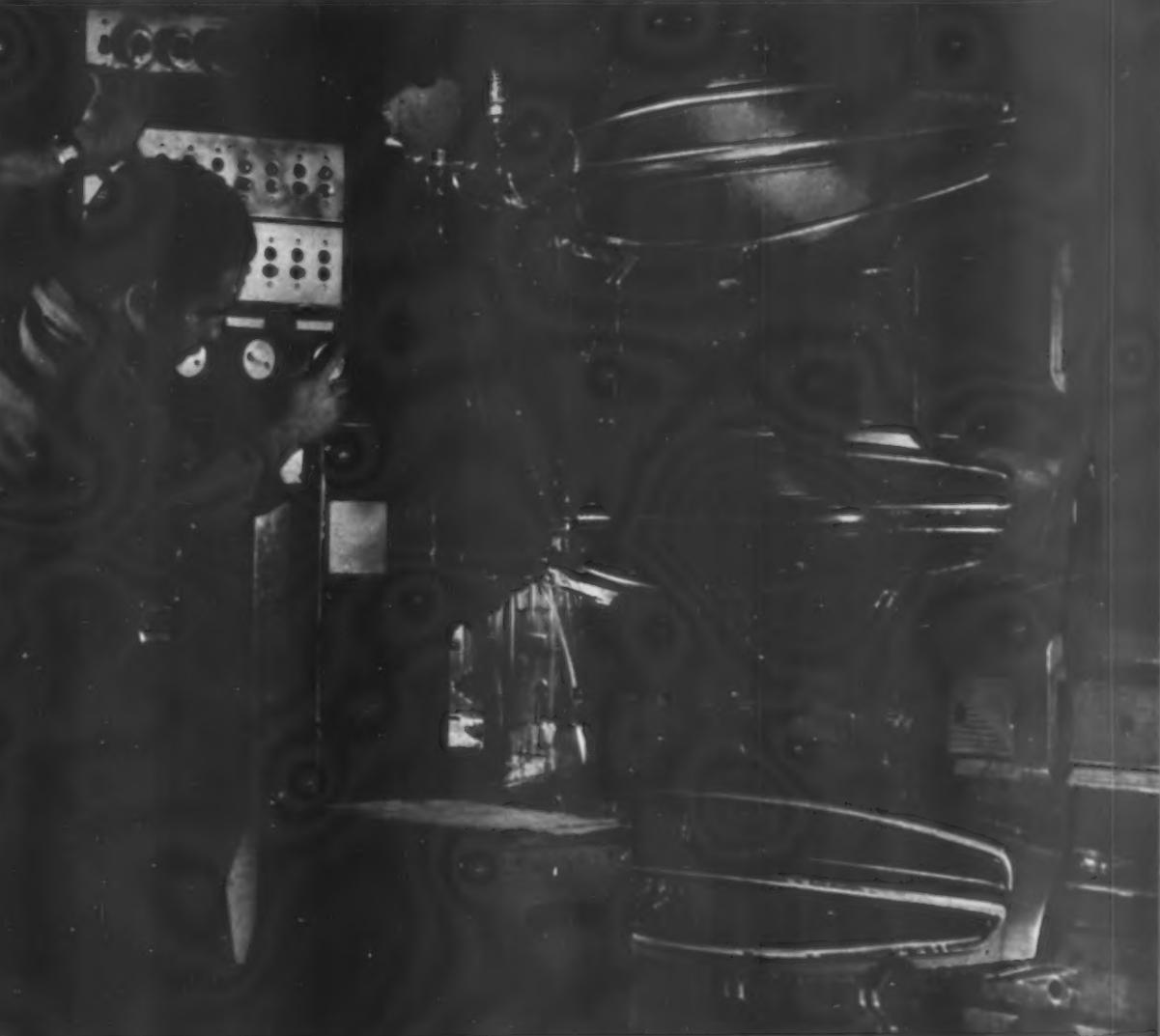


AEROPRODUCTS DIVISION • GENERAL MOTORS CORPORATION • DAYTON, OHIO

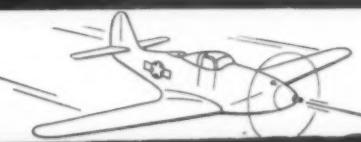


In War and Peace, Propeller Production at its Best!

Aeroprop



KEEP 'EM FLYING!



BUY BONDS!



Multiply this...
by 9,000,000



... to keep fighting radios on the beam!

Under pressure of war's demands for immense quantities of radio equipment for use on land, at sea and in the air, crystal grinding techniques have been revolutionized.

More than 9,000,000 crystals have been produced for war by Western Electric to date. One of our shops now makes as many crystals in a day

as the whole industry used to turn out in a year! And four such Western Electric shops are now working.

In other phases of Western Electric's war work, much the same thing has been happening. Radio receivers and transmitters of many types have been produced by the tens of thousands—miles of all types totaling

more than 600,000—over half a million headsets—vacuum tubes by the millions.

As a natural result of Western Electric's years of leadership in telephone and radio work, this Company is today *the nation's largest producer of electronic and communications equipment for war.*

To speed Victory, buy War Bonds regularly—all you can!



(S

w
up

an

ing
Pa
had
un
by
Be
use
me
eve
ver
oth
ma
get
wo
Car
don
for
pre

T
How
abo
'he
was
ver
to
of
it
has
and
effor
lad
first

Br
air
cert
Can
day
and
day
bra

No
in
lock
to
fa
has
offic
keep
There
over
not
the
will
He
"sub
parce
the r

Mr.
newsp
can r
which
there

At
Canad
mile.

A m

Canada's Postwar Policy Will Include First Class Mail by Air

By AUSTIN F. CROSS

(Special Canadian Correspondent and author of "The People's Mouths")

OTTAWA, CANADA—Canada's post-war air mail policy can be summed up at present in three sentences:

1. All possible first class mail by air.
2. More frequent flights.
3. More places served by air.

Canada's air mail operation is advancing energetically now under Hon. William Pate Mulock, Postmaster General, but it had a long way to go to catch up. It was unwittingly sabotaged in the depression by the unimaginative Viscount William Bennett, who as prime minister, had little use for any air travel, and as an economy measure squelched airlines, air mail, air everything. Canada thus went into reverse motion for five years. While all other countries were developing fast air mail, going all out as fast as they could getting ships for passenger transport, and working feverishly to build up air forces, Canada abandoned her air mail, abandoned her airlines, abandoned her air force. She paid dearly for the reactionary premier's obtuseness.

The result was that when Hon. C. D. Howe, then Minister of Transport, set about to develop Canada's air resources, he had to start at the very beginning. It was like beginning all over again, in a very un-natural way. For if a child learns to walk at 18 months, no one thinks much of it, and it is easy for him. But if a man has to learn at 18, it is extremely difficult and awkward. As far as her belated air effort was concerned Canada was like the lad of 18, trying to use his legs for the first time.

But two or three years before the war, air mail was to some degree carried, over certain portions of the future Trans-Canada route. Then came a momentous day in 1939, when Howe unveiled his TCA, and the planes started to carry mail every day of the year all across Canada. Then branch lines filled in the rest.

Now, air mail these days is pretty much in the hands of Postmaster General Mullock. Looking into the future, he is known to favor a faster handling of air mail. He has predicted that after the war, the post office will endeavor, as far as possible, to keep all first class mail up in the air. There are certain short distances where an overnight train would do just as well, if not better, than a plane. But wherever the plane is more efficient, first class mail will go up.

He also predicted that there would be "substantial reductions" in the postage on parcels, so that air parcel post will not be the relative luxury it now is.

Mr. Mulock pointed out that even today, newspapers use air express so that they can reach distant cities on the day during which they were published. He believes there will be more of this.

At present, the post office pays Trans-Canada Air Lines 43 cents a poundage mile. This is a substantial reduction from

the original 60 cents. But he believes all air mail rates will have to be substantially lower after the war.

The postmaster general would not be surprised if the era of the mail plane arrived after the war. In Canada, due to the shortage of aircraft, mail must take its place with passengers. At present, air mail is often held up because TCA runs a careful, if not actually cautious schedule. Thus, they will not accept the responsibility of flying planes in certain weather. But if the planes were not flying passengers, many a cancelled flight would be safely made. The post office hopes the advent of the mail plane will be soon after the war.

The post office looks rather wistfully across the line to the United States, where it is understood that air mail has always been the backbone of air transport. Here, air mail gets into a passenger plane as and when it can.

Thus, the mail plane in Canada would be the answer to the Postmaster General's prayer.

Then there are the remote places, which were once served by dog team or ship, and which are by such media months removed from the outside world. Yet a plane can get to any of them from dawn to dark. The idea in the future will be to get into these places more frequently. This of course also goes to the inter-urban runs. But spots like Ungava Bay, Aklavik, Goldfields, Yellowknife, Cameron Bay, just to mention a few, and even spots on the railway like Churchill and Moosinee, can be much more readily served by plane.

The post office also has in mind the spreading out of mail tentacles to isolated communities yet untouched. These will not be paying propositions, but such calls will have to be made.

Canada, after a slow start, is definitely airminded now when it comes to the post office. As a matter of fact, there is no other seven cent stamp in Canada, except the air mail stamp. Gone are the days of lassitude and indifference. Air mail is big business.

But the post office is itching to do a real job after the war, to get all possible first class mail air borne, and to secure planes exclusively carrying mail, and to build up a parcel route through the sky.

One more thought. Where else but Canada will the mail from Europe be sorted, as it is put down from European planes in Canada, for delivery in Asia and Australia? Canada sees herself as the central sorting office for the Empire, for the Far East, and for Europe and Africa eastbound. Even the United States may toss some of this business Canada's way, if she can.

London Man on AEIA Board

A. Chester Beatty, Jr., London, England, has been elected to the board of directors of Air Express International Agency, Inc. The new director is prominent in financial and mining circles in England and Africa, and also has substantial interests in the United States.

'Biggest Load of Shells'

The Navy reports that two planes, carrying the biggest load of shells ever transported by air, recently completed a flight from the United States to a North African base in 34 hours "through weather so bad that combat planes were grounded." The Naval Air Transport filled the order. It went to French warships bombarding German lines in support of ground troops. No shells to fit the ships' guns were available nearer than America.

Tenfold Increase in Air Transport to Be Needed In Few Years, Says Ray

To meet needs of postwar national defense, we should have 10 times as much air transport as we had before the war. James Ray, vice president of operations for Southwest Airways, told members of the San Francisco Junior Chamber of Commerce in a speech before that group March 1 at the Commercial Club.

"We must expand air transport into every field—international, domestic trunk and feeder operations. Never forget that aviation is our greatest weapon now and in the future. Knowledge is the most important factor in using the implement of aviation. We must continue to have knowledge in building planes, training pilots, operating airlines as well as actual flying."

He predicted that feeder airlines can serve 75% of the nation's cities of 2,000 or more population without extensive mail subsidies. In certain areas, Ray claimed that feeder operations can be completely self-sustaining from the outset.

Specifically discussing four proposed Southwest routes originating in San Francisco, Ray foresaw five round trips daily at the start of operations, increasing rapidly to hourly schedules within a few years.

Lend-Lease Aid to Russia

Lend-lease aid to Russia in the 27 months from October, 1941, to January, 1944, included 7,800 warplanes, 3,000 of which were ferried all the way by air, it was disclosed last fortnight by Leo T. Crowley, Foreign Economic Administrator. More than 5,000 of the planes were reported sent in 1943. The Russians also got 740,000 tons of aviation gasoline and other fuels.

Quinine Seedlings by Air

A new source of quinine, to replace that lost when the Japanese overran the Dutch East Indies, is rapidly being developed in several Central and South American countries, a survey by the Air Express Division, Railway Express Agency indicates. Up to a recent date, REA reports, 131,000 seedlings of cinchona trees, from the bark of which quinine is produced, have been flown by domestic and international air express from Washington, D. C., to Peru, Ecuador, Colombia, Brazil, Nicaragua, El Salvador, Mexico, Puerto Rico, and Costa Rica. Permanent quinine plantations have been established in these countries.

Report From London

by JOAN BRADBROOK

LONDON, ENGLAND—Three new British transports have been announced lately—the Brabazon Type I, the Tudor and the Halifax Transport. The first two were mentioned for the first time by Lord Beaverbrook in the House of Lords on Jan. 19.

The Brabazon Type I is not expected to be ready during the War, although its design has begun. It is planned to have an all-up weight of more than 100 tons with a cruising speed of 250 m.p.h. and to carry 50 passengers and two tons of mail. Flying time for the Atlantic route is expected to be about 15 hours. Prototypes have been ordered but the Brabazon I—socalled because it is the first of the types recommended by the Brabazon Committee—will not be flying for some years. Incidentally, the name "Brabazon" is obviously not intended to stick. It is rather a specification number for, later on, presumably a Brabazon Type II and a Type III may be expected.

The Tudor is a smaller project intended for both Winter and Summer crossings of the Atlantic with 12 passengers and provision for a pressure cabin. All-up weight will be 32 British tons (72,000 lb.) and cruising speed 220 m.p.h. It is expected to be ready before the end of the War and to prove useful as a military transport.

Lord Beaverbrook gave no indication of the companies which will build these two types but rumour has already connected the Brabazon Type I with the big landplane which the Bristol Aeroplane Company is known to have in mind and the Tudor with Avros. Historically Tudor follows closely the nomenclature Lancaster and York.

Latest news of the York is that B.O.A.C. is about to take delivery of its first machine of this type, which will probably accommodate about 24 passengers. Also, the South African Government has ordered a York, but whether for passenger or freight work is not known.

As a freighter with R.A.F. Transport Command the York has a large capacity for freight of all kinds, such as four jeeps. It looks sturdy and capacious and pilots say that it is just an "over-grown Anson" to fly, than which there can be no higher praise from a British pilot.

The third British type mentioned is the Halifax Transport which bears the same relationship to the Halifax bomber as the York does to the Lancaster, except that the Halifax is to have a pressure cabin and air-cooled radial engines. (The York may be fitted with either Merlin or Hercules engines). The performance of the Halifax will probably be much the same as that of the York, or a little better, but obviously it will be smaller than the Tudor.

News has also been released of another British type in service with R.A.F. Transport Command—the Armstrong Whitworth Albemarle. Designed originally as a twin-engined reconnaissance-bomber it has undergone many modifications and has now settled down as a transport and glider tug. It is of mixed wood and metal construction and has a retractable tri-cycle undercarriage. Some have been sent to Russia. The Albemarle might have possibilities as a stop-gap freighter for post-war commercial services.

Airports and Aerodromes
The Department of Civil Aviation (the

Department of the Air Ministry specifically in charge of civil aeronautics arrangements—except policy)—has just taken a bold step and issued a pamphlet containing estimates of the types of aerodromes which may be required in Great Britain after the War. The estimates, which the Department emphasises are provisional only, have been compiled from the most up-to-date technical information available. The Department states that the pamphlet supersedes one issued in 1938 on "The principles governing the planning and zoning of land aerodromes," which is now out of date, and that the present pamphlet will be revised later as may be found necessary. Also, that no attempt has been made to formulate designs for aerodromes, which can only be done in relation to local conditions.

Five main types of aircraft and aerodromes are mentioned:—trans-ocean (landplanes), inter-continental, trans-continental, continental and local. The types of aircraft mentioned are purely generalisations representing the maximum sizes likely to be used on the different ranges during the next ten years.

For trans-ocean aircraft route stages of 3,000 to 4,000 miles are mentioned and estimated maximum weight expected is given as up to 350,000 lb. with a wing span of up to 300 ft., length of up to 240 ft., wing loading of up to 65 lb. per sq. ft. and power loading of up to 14 lb. per h.p. Particulars of the other types are:—

Inter-continental, flights of 1,600 to 3,000 miles, allup weight up to 180,000 lb., span up to 220 ft., length up to 175 ft., wing loading up to 65 lb. per sq. ft. and power loading up to 12 lb. per h.p.

Trans-continental, flights of 750 to 1,600 miles, weight up to 90,000 lb., span up to 170 ft., length up to 135 ft., wing loading up to 55 lb. per sq. ft. and power loading up to 11 lb.

Continental, for flights up to 200 to 1,000 miles, weight up to 45,000 lb., wing span up to 125 ft., length up to 100 ft., wing loading up to 40 lb. per sq. ft. and power loading up to 10 lb. per h.p.

Local (internal or domestic traffic), for flights between 100 and 500 miles, max. weight up to 30,000 lb., span up to 110 ft., length up to 80 ft., wing loading up to 27 lb. per sq. ft. and power loading up to 11 lb. per h.p.

Characteristics of the aerodromes suggested under these headings are:—trans-ocean, length of main runway 5,000 yds. by 200 yds. wide, the longitudinal gradient not to exceed 1 in 100 between any two points. A cleared strip on each side and an additional unobstructed area giving a maximum width of 1,000 yds. is recommended and unobstructed clearance at each end of the runway of another 1,000 yds.

Inter-continental, a main runway 3,750 yds. long by 450 yds. wide; trans-continental, main runway 3,350 yds. by 300 yds., continental 2,750 by 200 yds. and local, 1,900 yds. by 150 yds.

This pamphlet has been issued just at a time when various localities in Great Britain are beginning to think and plan for airports. Wales, Scotland, Portsmouth and Southampton are among the places which would like to attract international air traffic and are already planning airports. The pamphlet should prove a useful guide for such projects. Incidentally, Croydon is not expected to become again Great Britain's main landplane terminus.

The Shipping Companies

Two new airline companies have been registered recently—British Latin-American Air Lines Ltd., and British Maritime Airways Ltd. The former is the name adopted by the five shipping companies which are planning services to South America and hoping to start before the end of the War. The companies involved are:—Royal Mail Lines Ltd., Blue Star Lines Ltd., Pacific Steam Navigation Co., Booth Steamship Co. Ltd., and Lamport and Holt Line.

Shipping companies over here obviously mean business so far as air transport is concerned and progress with their plans is expected before long. Lord Beaverbrook's statement on Jan. 19 that B.O.A.C. was not a monopoly (except in so far as it has a monopoly of subsidies for oversea air traffic) and that there could be no statutory objection to private, shipping or other concerns operating without subsidy, has caused some surprise. But shipping companies will probably need and may get—more Government assurance than this statement before they start competing with B.O.A.C. and its subsidy.

On the purely domestic side, although it may affect relations with European countries, British Maritime Airways is interesting because it is believed to consist of a number of smaller shipping companies mainly concerned with coastal and short sea routes and the four main-line railway companies. Some weeks ago a number of the companies intimated their intention of forming a separate company to operate new internal and continental passenger and cargo air services. Some of the companies concerned hold interests in the internal air lines already operating in Great Britain, together with the railway companies, such as the Isle of Man Air Services, Scottish Airways and West Coast Air Services Ltd.

British short sea route shipping companies cover routes around England and Scotland, to the Continent, the Baltic and down to the Mediterranean, so the possibilities are interesting. If the railways join with them they will have the benefit of one of Great Britain's most experienced air line executives—Mr. D. H. Handover, for many years Traffic Director of Imperial Airways Ltd. and then of B.O.A.C. He has been connected with British air transport since 1920 and left B.O.A.C. at the beginning of the year to become Air Advisor to the four main-line railway companies.

The outlook for air transport is full of interesting possibilities. There is a movement on foot to revive I.A.T.A.—the International Air Transport Association which functioned in Europe for so many years. Lord Beaverbrook has declared that the British Government is in full agreement with President Roosevelt about the "rights of innocent passage"; and that the British Government has no wish to exclude the aircraft of other nations from bases under British control, so long as traffic arrangements are satisfactorily agreed. That should clear the air of misunderstanding about bases.

Lord Beaverbrook also stated that the British Government was ready to enter into an international conference and was waiting for the United States to complete its surveys. Just where the agreement between Australia and New Zealand on internationally operated air routes comes into the picture few people over here seem to know. Generally, we are just bemused as America must be.

They Keep Flying -

Through Perfect
**MECHANICAL
PERFORMANCE**

FLIGHT training to the extent of hundreds of thousands of hours is but a part of AVIATION ENTERPRISES LTD. war-time service. • Keeping a formidable fleet of single and twin-engine trainers in tip-top mechanical condition with its skilled mechanical personnel, numbered in hundreds, is also a major part of this organization's extensive operations. • Today AVIATION ENTERPRISES is keeping them flying by providing a high standard of mechanical maintenance for the U. S. Army Air Forces training program . . . a pattern for the character of aviation maintenance that AVIATION ENTERPRISES will make available to the public when the war is over.

AVIATION ENTERPRISES
Limited

Operate The Women's (WASP) Ferry Pilot Flight School at Avenger Field, Sweetwater, Texas, and the overhaul plant for the repair and overhaul of U. S. Army Air Forces planes at Municipal Airport, Houston, Texas.



Aviation Enterprises Ltd.

FLIGHT AND OVERHAUL CONTRACTORS TO THE U. S. ARMY AIR FORCES

MUNICIPAL AIRPORT
HOUSTON

AVENGER FIELD
SWEETWATER

Truman Report

(Continued from page 20)

dealing in such articles, above a specified percentage, the purchase price based upon normal business margins of profit.

● Surplus Plants.

Surplus Government-financed war plants which can be used in postwar production should be sold to private industry at a "fair" price. They should not be withheld, as is advocated in certain quarters, simply because they will place pre-war privately financed industry in a highly competitive position and threaten overproduction.

It is recommended that a pricing scheme for the sale of surplus war plants be formulated. First, the percentage by which the cost of construction at the speed and with the wasteful methods prevailing during wartime, was higher than it would have been at a slower rate and during peacetime should be determined. After such figures have been determined, it would be appropriate to make a blanket offer of all Government facilities required by the War and Navy Departments for standby plants to their present operators at the cost of war construction less the percentage by which the cost of war construction on the average exceeded the probable cost of peacetime construction.

Since the Government-built plants were specially constructed for specific war programs, they would seldom be as valuable to private operators as plants specially constructed for items to be manufactured in peacetime. Possibly some additional percentage should be deducted as an allowance for this factor.

In cases of war plants requiring considerable reconversion for civilian production, the Government should make disposition for any consideration found to represent the actual fair value to peacetime industry. This type of consideration will require prolonged negotiation, and hence it is important that some arrangement be worked out for leasing such plants at a fair rental during the interim period.

● Postwar Reserves.

A plan allowing manufacturers to invest up to 20% of net income in a special issue of non-negotiable, non-interest-bearing, and non-taxable Government bonds, redeemable at any time prior to 18 months after the war, for reconversion to peacetime production. Although this proposal was rejected by the Senate as an amendment to the recent tax bill, the Committee believes that its advantages far outweigh its disadvantages, and will push for Congressional approval.

Three major objections have been raised to this plan: (1) a fear that all taxpayers would claim the full 20% deduction in figuring their current taxes, which would reduce the current tax receipts of the Government by several billion dollars; (2) the fear that there would be a reduction in tax rates even within the first 18 months after the cessation of hostilities, which would mean that when the proceeds of the projected postwar bonds are returned to income that income would be taxable at a lower rate; (3) a fear that some of the money so set aside might be used by some taxpayers for expenses not strictly of a "reconversion character."

The Committee categorically refutes

these objections. The first objection is believed to be without merit because the Government's present need is for cash to meet necessary wartime expenses. The postwar bond proposal would provide more immediate cash than the amount of taxes, which would be lost because the full amount of the taxpayer's net income used for the acquisition of these postwar bonds would immediately go into the Treasury, free of interest charges, whereas the highest tax rate applicable to such income is still substantially under 100%.

The second objection is one wholly within the control of the Congress. If taxpayers are provided with the means for coming out of this war in a financially sound condition, it may not be necessary within the first 18 months after the cessation of hostilities to reduce taxes materially. A plan, such as the reserve bond plan, which is conducive to postwar solvency would also be conducive to a higher postwar Government tax policy.

On the third objection, it is said that although some manufacturers might use their reserves for purposes not deemed strictly "reconversion expense," an effort "to police the spending of businessmen after the war would completely defeat one of the basic purposes for which this war is being fought."

● Renegotiation.

Supporting the renegotiation law, the Committee commends the policy of certain corporations, such as United Aircraft Corp., East Hartford, Conn., for adopting a policy of automatically refunding excessive profits to the Government. Repeal of renegotiation would discourage other corporations from adopting such a policy, and a situation might develop under which patriotic firms would suffer and their less patriotic competitors earn unconscionable profits which would place them at an advantage in the postwar period.

The Committee opposes the proposal for renegotiation "after sales."

The following table illustrates the extent of price reductions which have taken place in the aircraft field:

Item	First action 1942			Last action 1943			Percent reduction
	Date	Quantity	Price	Date	Price		
Heavy bomber	February 1942	1,200	\$238,728	December 1943	..	\$139,000	6%
Advanced 2-engine trainer	do	655	23,243	May 1943	..	14,436	3%
Aeronautical engine	do	8,790	15,000	September 1943	..	8,000	47%
Electric controllable 4-blade propellers	March 1942	120	6,473	August 1943	..	4,870	23%
Injection-type carburetors	April 1942	1,658	500	May 1943	..	372	26%

● Curtiss-Wright Improvements Noted.

Attention is called to the improvements made during the past year by Curtiss-Wright Corp., which was severely criticized in the Committee's last annual report, mainly for: (1) delivery of defective engines from its subsidiary plant at Lockland, O., (2) failure to meet production schedules on the Navy divebomber, the "Helldiver" (SB2C), at its plant at Columbus, Ohio.

"The engines are being properly inspected and produced in great quantity and . . . there is now a respectable and increasing production of the dive bomber with proper performance characteristics that enable the Navy to use it in combat

Predicts All Commercial Planes Will Be Diesels Within Next Five Years

Commercial planes that will burn furnace oil costing only six cents a gallon instead of high octane gasoline that costs about four times that amount are foreseen by Gordon Lefebvre, president of Cooper-Bessemer Corp., Cleveland.

"It is logical to assume that within the next five years, all commercial aircraft engines will be diesels," said Lefebvre in a recent interview. "In addition to important fuel economies, the diesel aircraft will have the inherent advantages of the non-explosive quality of its fuel, plus the absence of electrical interference, one of the most common hazards in air travel."

He pointed out that during the first nine months of 1943, seventeen of the nation's leading commercial airlines flew a total of 75,631,813 miles, carried 2,465,346 passengers, and transported more than 20,000 tons of express cargo. Had these airlines used diesel instead of gasoline engined planes, the saving in fuel costs alone would reach a high figure, as high horsepower gasoline engines consume about .38 pounds of fuel per horsepower per hour as against a diesel oil consumption rate as low as .36 pounds per horsepower per hour, he said. Under such economical operating conditions, according to Lefebvre, it is conceivable to anticipate a stratosphere flight from Miami to Moscow for about \$150 per passenger, with comparable low rates for express cargo.

Mayo New AAF Air Engineer

Col. George Mayo, CE, has been assigned as Air Engineer, Army Air Forces, retroactive to Dec. 7, 1943. Col. Mayo succeeds Brig. Gen. S. C. Godfrey, who has been given an unannounced assignment.

Argentine Air Attaché

Lt. Col. Carlos L. Manos recently arrived in Washington from Buenos Aires to take up his post as military air attaché at the Argentine embassy.

activities, where its greater range should be very valuable."

(The Committee inserted in its report a lengthy letter from Guy Vaughan, president of Curtiss-Wright, reporting on steps the corporation has taken to accomplish a record satisfactory to the Truman Committee).

Southwest Air Fair Apr. 28-30

The Southwest Aircraft and Accessories Exposition, originally scheduled for April 7-9 in Dallas, Tex., has been postponed until April 28-30 so that it will coincide with Texas Aviation Week and the meeting in Dallas of the Aviation Writers' Association.



EXPERIENCE COUNTS

in Radio Communications

The years spent at Wilcox factories in the development and manufacturing of dependable radio equipment have made Wilcox the choice of major airlines of the nation. Now, Wilcox equipment is performing also in military aircraft operations over the globe.

WILCOX ELECTRIC COMPANY

Manufacturers of Radio Equipment
Fourteenth & Chestnut, Kansas City, Mo.



ARS
fur.
allon
costs
fore
t of

the
in a
im-
air-
ages
fuel,
ence,
n air

first
the
flew
5,346
than
these
oline
costs
high
sume
ower
con-
per
Under
, ac-
le to
Miami
longer,
press

er
in
forces,
Mayo
who
sign-

y ar-
Aires
attache

ercent
reduc-
tion
0
42
38
0
47
0
28
2
26

should

report
ughan,
ng on
o ac-
o the

30
ssories
April
poned
incide
meet-
s' As-

944



65,000 POUNDS OF BOMBER!

65,000 pounds of bomber...and what a bomber it is! From Ploesti to Rome and Berlin and from Guadalcanal to the Marshalls and the Gilberts, the enemy has felt the devastating weight of the destruction the Liberator carries.

In 1940, the B-24 was equipped with seven machine guns...four 30 calibre and three 50 calibre. A crew of six was required to operate her... and her total gross weight was rated at 41,000 pounds. Today, the Liberator is rated at 65,000 pounds gross with ten to thirteen 50 cal-

ibre machine guns operating in four power turrets, with a crew of ten, ten tons of bombs and far greater supplies of fuel and ammunition.

Even with this 50% increase in load, the 56" tire size that equipped the original Liberator still does the job. Lighter, stronger U.S. Royal Rayon Cords replaced heavier, bulkier cotton cords. And today, more muscle, more strength to carry the thirty ton load of the Liberator loaded for action are built into the new Nylon tires supplied by "U.S." to the Army Air Forces.



U. S. Royal Smooth Contour Block Tread... The sharp edges of the U. S. Royal Block Tread protect against either forward or lateral skids—make take-offs and landings safer.

Listen to the Philharmonic Symphony program over the CBS network Sunday afternoon, 3:00 to 4:30 EWT. Carl Van Doren and a guest star present an interlude of historical significance.

UNITED STATES



RUBBER COMPANY

1230 SIXTH AVENUE · ROCKEFELLER CENTER · NEW YORK 20, N. Y.

NAA Adopts Program to Serve 'Consumer Level of Aviation'

THE CONSUMER LEVEL of aviation; defined as including the men and women who own, rent and fly personal aircraft, travel by airline or chartered plane, and dispatch property and mail by air; is now established as the definite field which the National Aeronautic Association proposes to serve.

Purpose of the Association was restated in a resolution adopted by the Board of Directors at Oklahoma City on Nov. 15, 1943. Since that time a new national program has been formulated to concentrate all of the activities of NAA in this single field represented by the consumers of aviation products and services.

"Obviously, NAA has a big job ahead and its membership must be swelled by many thousands," Lowell Swenson, manager, said. "Numbers alone will not be enough, however. The majority of its members are already identified with active local chapters where their effort and enthusiasm can best serve to accomplish the objectives of the NAA program. Additional chapter organization activity over the entire country is needed and is underway to revitalize the NAA."

The new national program was approved last fortnight by the executive committee. Incorporated in it are suggestions made by NAA chapter officers, councillors and directors from all parts of the country and all segments of aviation. The program is divided into six parts:

(1) *Private Flying.* (a) National Airport Plan: a national study to determine the requirements for private flying and seek cooperation between Federal, State, local agencies and private interests; (b) Civil Air Regulations: recommendations for simplification of present complex and unreasonable regulations; (c) Legislation: close vigil over local, State and Federal legislative bodies to advance interests of aviation consumers; (d) Pilot Training: sound war training service program for duration and creation of suitable air reserve training corps after end of war.

(2) *Aviation Education.* (a) Organized Schools and School Systems: for encouragement, extension and implementation of aviation education; (b) Youth Organizations: close liaison with Boy and Girl Scouts and other organizations offering counsel on aviation projects; (c) Academy of Model Aeronautics: promote all phases of modeling activities on national basis.

(3) *Post-War Membership Services.* (Final action on specific objectives to be taken by Board of Directors at conclusion of study.) (a) Maps: air maps provided free of charge; (b) Routing Service: cross-country routes, information on facilities and conditions of airports; (c) Mechanical Service: minor mechanical or tow-in service for members; (d) Airport Directory: airports, type and length of runways, lighting, radio and servicing equipment; (e) Approved Ports, Repair Depots, Hotels: definite standards for NAA approval; (f) FAI and Other Foreign Services: foreign services and courtesies for members.

(4) *Commercial Air Service.* (a) CAB: testimony and exhibits at hearings to obtain favorable action on applications designed to provide or supplement scheduled air transportation services to communities where public convenience and

necessity would be served; (b) National Airport Plan: urge adoption and seek cooperation of all interests; (c) Private Enterprise: favor preservation in commercial air services, operating under reasonably regulated competition.

(5) *Aircraft Industry.* (a) Consumer-Industry Liaison on subjects such as disposal of surplus aircraft, contract termination and renegotiation; (b) Private Enterprise: preservation of private ownership of aircraft manufacturing plants; (c) Scientific Research: continuation, expansion and coordination by both private and government agencies.

(6) *National Defense.* Seek immediate establishment of Department of National Defense with Secretary of National Defense and Under-Secretaries for Army, Navy and Air Forces.

Roscoe Turner, president of National Aviation Trades Association, declared: "The NATA is in complete accord with the program approved by the executive committee of NAA and pledges its full co-operation and support in the attainment of its high objectives. NAA is the oldest and largest aviation organization in the U. S. and its clearcut definition of intent to serve the consumers of aviation products and services augurs well for the future of civil aviation in America."

Martin Asks Industrial Freedom in Postwar Era

Industrial freedom in the postwar world was asked by Glenn L. Martin in a broadcast over Radio Station WOR recently.

"If we are to give men and women in the service and millions on the home front the opportunity they want and deserve, then, we in turn must be given a little freedom," he asserted. "We're a young industry, but we are the largest industry the world has ever seen. Right now, almost one tenth of the population of this country, more than 10,000,000 people, depend on aviation for their livelihood."

"If the industry is hampered or compelled to close its doors," Martin concluded, "the effect would be felt by nearly every man, woman and child in this country, and even more it would deny opportunities and jobs to millions of aviation men and women."

New Air Route to New Guinea

The Air Transport Command has started a new air route from the West Coast to New Guinea, using Douglas C-54's which fly the 7,000 miles on a schedule of 44 hours. The planes carry up to 27 passengers and 6,000 pounds of mail and cargo. Formerly this cargo was flown from the United States to a base in Australia, then ferried to New Guinea on C-47 Skytrains of the Troop Carrier Command.

Summary of Aircraft Facility Contracts

WAR PRODUCTION Board's Bureau of Planning and Statistics has compiled a Summary of War Supply and Facility Contracts by State, Industrial Area and County. The report covers the period from June, 1940 through December, 1943.

Of the total of \$148,619,705,000 awarded for all supply contracts, \$47,772,093,000 were for aircraft which includes contracts for "airframes; airplane engines, propellers and other parts; and certain related equipment such as parachutes and pontoons. Armament, instruments and communication equipment are excluded." The CAA column covers allotments to CAA and WPA from the Development of Landing Areas Program appropriation only; it does not include appropriations to CAA for any other purposes.

(Figures are expressed by thousands of dollars).

	Aircraft	CAA
Total	\$47,772,093	\$140,243
Alabama	2,803	2,214
Arizona	38,569	1,754
Arkansas		1,732
California	8,755,213	2,233
Colorado	1,366	236
Connecticut	2,656,635	693
Delaware	15,913	1,170
District of Columbia	2,121	150
Florida	2,710	13,103
Georgia	347,480	5,198
Idaho		1,098
Illinois	1,465,585	3,016
Indiana	2,386,870	2,461
Iowa	648	3,949
Kansas	2,239,474	693
Kentucky	206,012	3,439
Louisiana	131,031	2,199
Maine	20,211	2,227
Maryland	1,818,948	1,930
Massachusetts	269,803	1,478
Michigan	5,630,923	480
Minnesota	30,795	1,616

Mississippi	5,981	426
Missouri	739,601	3,267
Montana		1,168
Nebraska	563,763	495
Nevada		506
New Hampshire	3,002	108
New Jersey	3,295,998	3,890
New Mexico		2,585
New York	5,220,261	3,334
North Carolina	21,685	4,674
North Dakota		2,870
Ohio	3,029,363	4,830
Oklahoma	1,084,468	3,767
Oregon	1,202	6,229
Pennsylvania	794,102	1,383
Rhode Island	6,482	329
South Carolina		4,351
South Dakota		290
Tennessee	685,211	120
Texas	1,593,475	10,863
Utah	847	337
Vermont		636
Virginia	3,032	1,511
Washington	1,881,983	7,040
West Virginia		2,090
Wisconsin	502,763	1,747
Wyoming	12,197	1,279
Off Continent and Unassigned	2,193,328	17,029

Distribution of contracts in the leading aircraft war production areas from June, 1940 to Dec., 1943 (thousands of dollars).

Hartford	\$1,892,996
Buffalo	2,641,750
Nassau	2,100,057
Newark-Jersey City	3,070,137
Baltimore	1,660,678
Chicago	1,338,165
Indianapolis	1,373,574
Kansas City	1,201,613
Wichita	1,303,910
Dallas-Fort Worth	1,553,793
Los Angeles	6,139,819
San Diego	2,631,092
Detroit	3,372,895
Seattle-Tacoma	1,881,983

Carriers File Objections To Feeder-Pickup Report

Oppose Population Limitation, Ban on Surface Carriers

By GERARD B. DOBBEN

THE RECOMMENDATIONS of CAB examiners which would limit the future expansion of existing air carriers to cities above 25,000 population and which would continue to exclude surface carriers from entering the aviation field have borne the brunt of the moderately-toned criticisms which have been filed with the Docket Section of the Civil Aeronautics Board.

Based on extensive hearings on Local-Feeder-Pickup applications which were conducted for nearly a month last fall, Examiners William J. Madden and Albert F. Beitel filed recently with the Board a 100 page report, including a recommendation that air transport service should be expanded only on a sound, economic basis.

Existing carriers, both as individual companies and through the Air Transport Association, feel the Board should not adopt the recommendation of the Examiners which would generally exclude them from expanding their services to towns of 25,000 population or under. They feel that such a restriction will not be in the public interest.

Greyhound Files Memo

Greyhound Corp., of Chicago, which has on file with CAB applications for 38 helicopter routes involving 58,000 miles, together with some Western railroads, feel the Examiners have reached erroneous conclusions both as to the law and the facts in recommending that the Board adhere to its policy of excluding surface carriers from entering the aviation field.

The case of the individual carrier on the population limitation was probably best covered by L. H. Dwerlkotte, executive vice president of Western Air Lines, Inc., who expressed the belief that a sufficient distinction has not been made between probable feeder operations in eastern states as compared with western states.

"We feel that states in Mountain and Pacific areas create unusual and distinct problems and conditions which are not found in other parts of the country," Dwerlkotte's statement asserted. He then outlined Western's position as follows: (1) We believe that trunk line operators in the West should not be restricted in their future expansion to serve cities and towns of 25,000 population or over; (2) Single-engine, one-pilot operation in the West is infeasible, unsafe and would not provide adequate service in feeder service; (3) A 25 cents a mile maximum mail pay should not necessarily be imposed upon all routes of the West; (4) Regional trunk operators should not be excluded from participating in the feeder program.

Dwerlkotte pointed out that cities and towns in the west are relatively few and far between, with populations much smaller than in the densely-settled east. Because of terrain, he considered single-engine operation infeasible in the area west of the Rocky Mountains. High altitude flying is essential in order to clear obstacles and such performance is not possible with single-engine planes, he contended.

Because twin-engine, two pilot planes must be operated in certain sections Dwerlkotte believes the 25 cents a mile maximum air mail pay will be inadequate for lean feeder routes in the West, which may be very much in the public interest due to the isolation of the towns served. He further stated that the line of demarcation between a trunk and feeder route in the West is extremely thin in many cases, that a feeder route today may be a trunkline route tomorrow. For that reason he does not feel regional trunk operators should be excluded from the feeder program.

"The Examiners recommend that a limitation be imposed upon existing air carriers virtually preventing them from extending their services to cities of less than 25,000 population," the report of the Air Transport Association stated. (ATA emphasized that its report was being submitted as a matter of information and had not been acted upon by ATA members).

"Any such limitation, whatever its form,

Brother Act



Shown above are the three Tenan brothers, all of whom are senior pilots on Pan American Airways' Brazilian affiliate Panair do Brasil. Capt. Coriolano Luiz Tenan, center, has been with PAB for nine years and has more flying hours to his credit than any other Brazilian pilot, civil or military. His two younger brothers are Juliano, left, and Hugo.

would violate sound transportation principles, would invite a wholly needless burden of government subsidy, and would threaten the future coherence and efficiency of the air transport system.

"The Association's statement of Nov. 27, 1943 urges that a proper balance among air carriers is a vital consideration involved in the problem of building an air transport system. This does not mean that every air carrier can or should be equal in size to every other air carrier, or that service to the public must be sacrificed and the transport pattern warped merely in order to add to the stature of a given carrier. But it does mean that, so far as possible without sacrificing the best service of the public or twisting the transport system out of logical order, the Board should aim at a system in which each of several carriers, whether present or future, should be in a position to attain a reasonable degree of self sufficiency, without permanent dependence upon government subsidy or the subsidy of disproportionate division of joint rates.

"The Examiners' recommended limitation upon existing operators—which, presumably, would apply also to new operators of routes comparable to those now making up the air transport system—would seriously militate against that aim. The strengthening of existing routes, or of new trunk routes, through addition to them of points of less than 25,000 population would be entirely excluded from consideration.

"Any assumption that existing or prospective trunk air routes will not need strengthening is a grave error. An impression seems to have grown in some circles to the effect that the present type of air transport service is on a secure economic foundation and that, with the return of peace, it will proceed almost automatically upon a profitable basis.

Conditions 'Abnormal'

"This impression is born of the abnormal and purely temporary conditions of wartime. The combination of scarcity of transport means and urgency of travel and shipment will disappear, and disappear quickly, with the war's end. In its stead there will reappear exactly the same fundamental conditions which air transport faced four and five years ago. Even the old problem of fear of air travel is still present, as the Examiners' report itself says."

The ATA report mentions new complications which will affect the development of common carrier air transport. One of these is the plans of surface carriers to improve the speed and efficiency of their equipment, the other is the prospective increase in air travel by private plane which will affect the potential business available to scheduled air transport.

"The Examiners' recommended limitation has a further and even more serious defect. In virtually excluding from trunk operation the points of less than 25,000 population, the recommendation places the standard of efficient public service in an inferior position whereas it should be the most important," the report stated. It was then pointed out that many cities, some of which could be served without adding a single mile to the trunk route, might be excluded from the advantages of single-carrier, direct service."

Counsel for Greyhound Corp. asked the Board to be heard in oral argument at (Turn page)



COURSES COMPLETED BY TRAINING COMMAND STUDENTS
(as of 30 Nov. 43)

Air crew	1939	1940	1941	1942	1943	Total
Pilots.....	696	1,786	7,244	28,782	56,008	94,516
Navigators.....		44	601	4,477	13,783	18,905
Bombardiers.....		18	310	5,760	13,998	20,086
Aerial gunners.....			...	25,820	81,398	107,218
Miscellaneous.....			198	2,325	18,850	21,373
Technicians.....			...	273,068	513,333	786,401
TOTAL	696	1,848	8,353	340,232	697,370	1,048,499

BEECHCRAFT BOMBER CREW TRAINERS

Leading formation, Beechcraft AT-10 advanced pilot trainer. Second, Beechcraft AT-7 (Navy SNB-2) navigation trainer. Third, Beechcraft AT-11 (Navy SNB-1) bombing trainer. The thousands of these Beechcrafts in use by the Armed Forces have played a dominant part in the training of bomber pilots, bombardiers, and navigators and have earned their excellent reputation by faithful and efficient performance.

A magnificent accomplishment is summarized in the figures quoted above. In only two years, the Training Command of the U. S. Army Air Forces has schooled virtually the entire personnel of the world's greatest air army. Its graduates are beyond doubt the best-trained airmen in all military history. The results of their training are apparent in every news dispatch that tells of bombing missions successfully completed, and of aerial combat scores predominantly favoring our air arms. Here is the sure forecast of our Victory . . . for Victory today must be won in the skies.

Beechcrafts are doing their part!

Beech Aircraft



C O R P O R A T I O N

BUY U. S. WAR BONDS AND STAMPS

WICHITA, KANSAS, U. S. A.

(Continued from preceding page)

the question of the exceptions which they have made to the Examiners' report.

The Greyhound Corp. listed the following eight exceptions as being erroneous conclusions of law and findings of fact:

1. In accepting a prior decision of the CAB as a conclusion of law or administrative policy that Section 408 (b) of the Act of 1938 prohibits the participation of surface carriers in air transportation beyond those limited air transport services "which are auxiliary and supplementary to the other transport operations and which are therefore incidental thereto."

2. In failing to recommend to CAB that, in the light of specific proposals before it, Section 408 (b) means exactly what it says, namely, that participation by surface carriers in air transportation shall be approved if the Board find that such participation "will promote the public interest by enabling such carrier other than an air carrier to use aircraft to public advantage in its operation and will not restrain competition."

3. In failing to recognize that the air service proposed by bus operators as distinguished from other proposals would vastly extend air transportation service by making possible the carriage of a large volume of short-distance traffic, entirely ignored by the Examiners as well as by proponents of "feeder" or "pickup" service.

4. In failing to find that development of the helicopter is sufficiently advanced to demand that any comprehensive plan for expanding air transportation should be formulated to take full advantage of its unique potentialities for public service.

5. In failing to find that helicopters at present are as available for proposed expansion of air service as other types of aircraft suitable for such purpose.

6. In finding that when the helicopter becomes available it can or will be used on services now or hereafter authorized in the manner best suited to its inherent characteristics.

7. In recommending that applications proposing an operation by helicopter be deferred until such time as commercial helicopters are available.

8. In failing to recommend that the expansion of the air service system by presently operating carriers should be limited to the extension of service by presently operating types of equipment and then only in those instances where the proposed extension will not impair in any manner the national plan for the extension of air transportation to local service.

Greyhound pointedly states in its brief that the Board must decide whether or not its proposal will promote the public interest by enabling bus operators to use aircraft to public advantage in their surface operations and will not restrict competition.

While commanding the Examiners highly for their careful and intelligent report, TWA asserts that one of the most vital points of determination in this proceeding is the question whether the extension of air transportation to smaller communities should be undertaken by existing carriers or new carriers. The Examiners, the TWA brief stated, recommend that this extension be accomplished in part by existing carriers and in part by new carriers.

"The Examiners have listed the advantages of having new service rendered by existing carriers. The items they list are: (a) lower cost, (b) ability to operate a small segment at a loss by securing

On First Flight



This trio made the first official flight on Continental Air Lines' new Route 60 between Denver and Kansas City, with intermediate stops at Salina and Topeka. Left to right —O. R. 'Ted' Haueter, CAL's vice president, operations; Mildred 'Tommy' Heck, chief hostess; and J. F. 'Jack' Weiler, chief pilot.

long-haul traffic (c) greater equipment utilization (d) experience and (e) higher quality," TWA counsel pointed out.

"But this list omits the most important advantage of all that arises when new service is provided by the existing carrier; namely, the advantage to the passenger of being able to deal with one carrier instead of many carriers when making a single trip.

"In contrast, it is plain that increasing the number of new carriers to any substantial degree will add to the difficulties of travel, rather than relieve them and will place air travel at a disadvantage when compared to surface transportation. This raises a challenging question: Can a sound air pattern be developed on any proposal that would make air travel more difficult than rail or bus travel?"

Blue Ridge Lines, Inc. which has extensive applications on file for integrated bus and air service believed the Examiners erred in setting the 25,000 population figure because it contends the report shows that existing lines have not developed a satisfactory amount of traffic out of cities having less than 50,000 population. Further this company believes that use of the helicopter contains so many possibilities for the extension of service that the development should be fostered rather than delayed by procedural barriers.

Chicago and Southern Air Lines, Inc. took pointed exception to the Examiner's recommendations with reference to the population limitation of 25,000.

Simplified Refund System

Pan American Airways announces a simplified refund handling system. Refund applications will, as in the past, be prepared at the point of interruption of the passenger's journey, but forms can now be forwarded directly to the proper accounting office rather than via central reservations control offices and division traffic managers. In addition, any PAA ticket office in the continental United States is now authorized to refund a wholly or partially unused PAA ticket or order drawn on PAA or any other line if it has been issued in U. S. currency by itself or any other PAA ticket office in the U. S. or U. S. territory. The previously-applicable 30-day restrictions are eliminated. New-type tickets with a refund coupon will be ready shortly.

"C & S is of the definite opinion that the examiners have reached an unfortunate conclusion by basing their thinking on a completely false major premise. In Docket No. 998, C & S has proposed five feeder or local service routes of the type which this company considers most feasible and economic in connection with its present trunkline operations," the letter stated.

Counsel for the carrier pointed out that nowhere in its applications does it state that it proposes to operate the feeder services with the same type of equipment which is used on trunkline operations. The Examiners, in their recommendations, appeared to recommend that the major lines be excluded from certain types of feeder and local services so that encouragement would be given to use of smaller and more economical type of planes, which it was felt would bring down air travel costs.

A number of surface carriers, including the Atchison, Topeka and Santa Fe Railway Co., the Chicago, Milwaukee, St. Paul and Pacific Railroad Co., the Burlington Transportation Co., Frisco Transportation Co., Eagle Airlines, Inc., Interstate Transit Lines, Kansas City Southern Transport, Inc., Rebel Air Freight, Inc., Rio Grande Motor Way, Inc. and Wabash Railroad Co., jointly sent the Board the following conclusions:

"The surface carriers participating in this presentation insist they have shown of record in this proceeding that they have a place in the local and feeder field; that neither the law nor the facts developed on this record justify their virtual exclusion as recommended by the Examiners.

"They seek no preferred treatment merely the right to such authority as they can show will serve public convenience and necessity. They seek treatment equal to that accorded other applicants. The arbitrary formulation of a policy which would import into Section 401 of the Act the proviso of Section 408 we believe to be erroneous and contrary to the Congressional mandate.

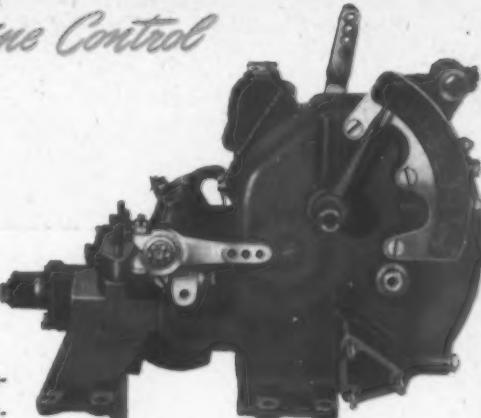
"We respectfully urge the Board to set aside Recommendation No. 7 of the Examiners and that part of the report designed to support such recommendation and to find that surface carriers should not be discriminated against in applications for certificates of public convenience and necessity to render local and feeder air service."

Simmonds-Hobson Automatic Engine Control

A STEADY HAND
AT EVERY THROTTLE

WITHOUT attention from the pilot, the Simmonds-Hobson Automatic Engine Control assures efficient power-plant operation under varying flight conditions. A notable development in aircraft engines, it is equivalent to a third hand for the pilot—giving automatic control of manifold pressure (boost) and mixture, thus providing engine protection and economy of operation.

Simmonds-Hobson Automatic Engine Controls have been specified for the most advanced types of fighter planes, where they are performing an outstanding job under exacting military requirements. Through continued research and refinement, new and more advanced designs, extending to the propeller governor, spark, and other engine functions, will be available to render increased service for peacetime assignments.



The Simmonds-Hobson
Automatic Engine Control
Mark 46

Simmonds Equipment
Flies with Every Type of
Allied Aircraft

Automatic Engine Controls
Push-Pull Controls
Hydraulic Accumulators
Hydraulic Fuses
Chronometric Radiosondes
Spark Plugs
Self-Aligning
Rod-End Bearings
Cowling and Panel Clips
and Fasteners

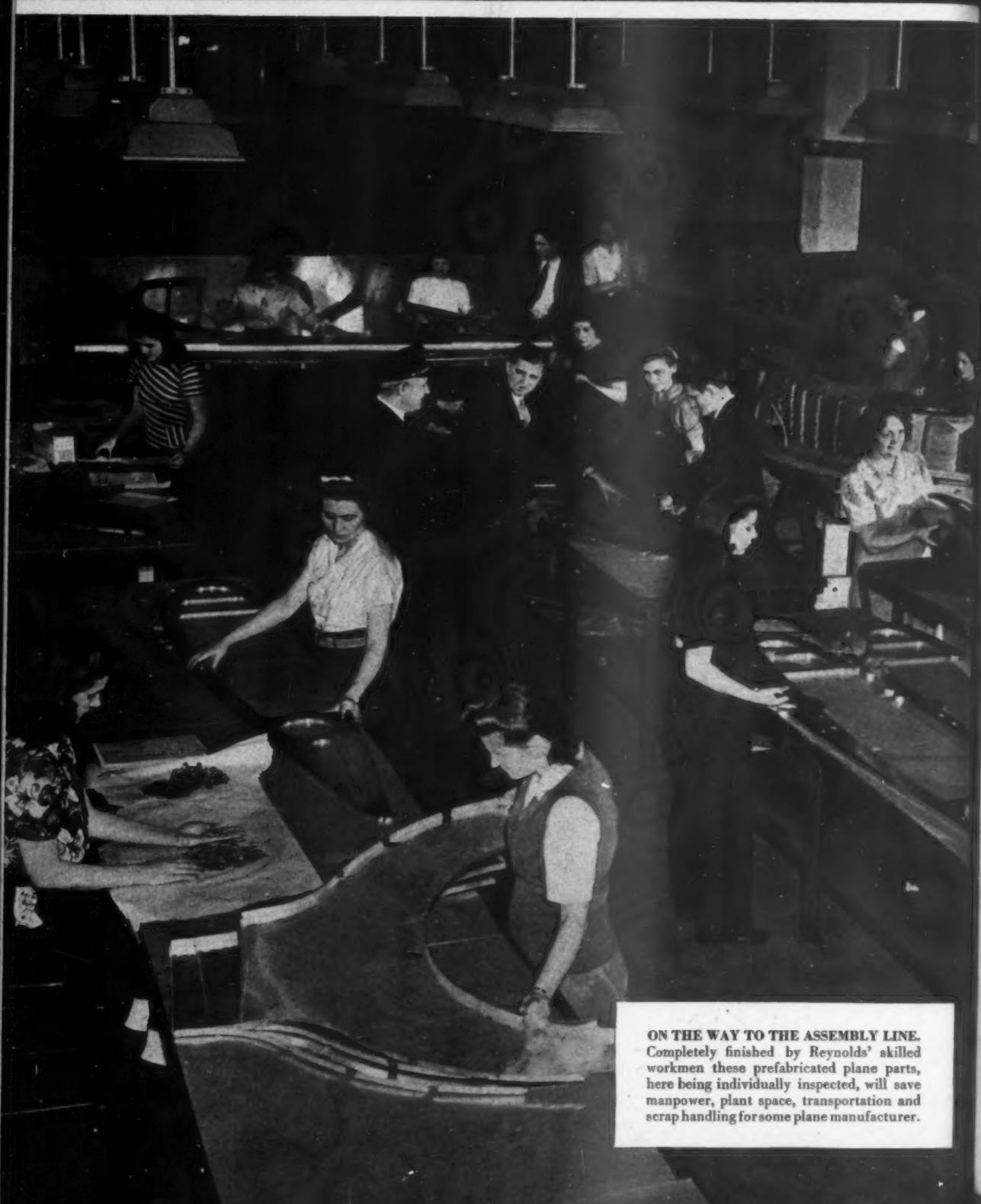


SIMMONDS
AEROCCESSORIES INC.

10 ROCKEFELLER PLAZA, NEW YORK, N.Y.

6250 HOLLYWOOD BLVD., HOLLYWOOD, CAL.

Thousands of man-



ON THE WAY TO THE ASSEMBLY LINE.

Completely finished by Reynolds' skilled workmen these prefabricated plane parts, here being individually inspected, will save manpower, plant space, transportation and scrap handling for some plane manufacturer.

n-hours SAVED...

by Prefabricated Plane Parts Service . . . Pioneered by REYNOLDS

HERE'S one answer to your manpower shortage. An answer that's already saving thousands of precious man-hours of airplane labor for every leading manufacturer of combat planes.

Under this plan, pioneered by Reynolds only 3 years ago, completely finished parts come to your production lines ready for immediate assembly. No longer is it necessary to tie up valuable plant space with large stocks of aluminum sheet or die-cutting and forming machines.

All of this is done for you, at the Reynolds plant, by workmen skilled in the prefabrication of the parts you use. Men in your plants who would ordinarily fabricate these parts can be used on assembly lines and in other important jobs.

Big savings in scrap handling realized

The Reynolds prefabricated plane parts service also does away with scrap handling. Aluminum scrap, which averages 30% of every sheet, is immediately re-rolled into prime sheet, then

prefabricated into more new parts, practically overnight. There is no needless cross-shipping of scrap. In figuring prices on parts, Reynolds allows plane manufacturers full price for scrap accumulated, thus saving entire cost of handling.

It is this kind of progressive thinking and co-operative planning that has resulted in an organization which now operates 40 plants in 14 states, and continues to grow by leaps and bounds. For Reynolds men are not satisfied to have been the first to supply finished plane parts from aluminum sheet. They have given themselves the continuous job of finding new ways to make aluminum better . . . easier and cheaper to use.

That's why you'll find Reynolds' resources, equipment and engineering skill can be of assistance in helping you with your aluminum problems, *no matter what they may be*. Reynolds Metals Company, Aluminum and Parts Divisions, Louisville, Ky.



REYNOLDS *The Great New Source of* ALUMINUM

INGOT · SHEET · EXTRUSIONS · WIRE · ROD · BAR · FORGINGS · TUBING · FOIL · POWDER

SELF-LUBRICATING BRONZE BEARINGS at 37 POINTS*

AND PRECISION, PRELOADED
BALL BEARING HEADSTOCK



*Arrows indicate location and number of self-lubricating bearings in Logan Quick Change Gear Lathe. All Logan Lathes are similarly protected.

The day you install a Logan Lathe you end your worries about the constant oiling of vital parts. Take, for example, the Logan Quick Change Gear Lathe shown above. At 37 points where plain, oil-thirsty bearings are ordinarily furnished, this lathe gives you *self-lubricating bronze bearings*. Here is a feature of Logan advanced design which automatically eliminates a prime cause of breakdowns. Furthermore, the spindle on this and all Logan Lathes turns on precision, preloaded ball bearings that never need lubrication. This Logan combination of self-lubricating bronze bearings with precision, preloaded ball bearing spindle mounting forms another important reason why Logan Lathes are setting remarkable records for sustained accuracy . . . high speed, low cost production . . . longer machine life. Write today for the new catalog that gives you complete information on the advanced design features of all models of Logan Lathes.

Brief Specifications: . . . Swing over bed, 10½" . . . Between centers, 24"
 . . . Bed length, 43½" . . . Spindle hole, 25/32" . . . Precision ground ways: 2 prismatic
 V-ways; 2 flat ways . . . 12 spindle speeds, 30 to 1450 r.p.m.

Logan

A NAME TO REMEMBER WHEN YOU THINK OF LATHES

LOGAN ENGINEERING CO.

Chicago 30, Illinois

One of a series describing the finer features of Logan Lathes . . . Look for the next of the series

Logan No. 200 Back Geared
Screw Cutting Lathe with
Self-Lubricating Bronze
Bearings at 23 Points



Logan No. 850 Manufacturing
Turret Lathe with Self-Lubri-
cating Bronze Bearings at
19 Points



2,000-Mile Airline Opened in Mexico; Seeks U. S. Routes

ROUTES COVERING 2,000 miles, including a transcontinental line from the Pacific to the Atlantic, have been opened in Mexico by Linas Transcontinentales de Aero Transportes S. A., and plans are being made to extend into the United States.

The transcontinental route of the company runs from Mazatlan on the west to Tampico on the east, via Tepic, Guadalajara, Aguascalientes, and San Luis Potosi. Operations are also being conducted between San Luis Potosi and Saltillo, between Torreon, Saltillo, Monterrey and Matamoros (across the border from Brownsville), and between Monterrey and Piedras Negras, on the Texas border.

Manuel Reachi, president and general manager of the company, told *American Aviation* last fortnight that he is filing application with the Civil Aeronautics Board for permission to fly into the U.S., thus making his company the first wholly Mexican-controlled international operator. He declined to reveal what points would be served in the U.S. Previous stories have indicated, however, that Aero Transportes wished to fly into San Antonio.

His company, Reachi emphasized, is Mexican-controlled and is "absolutely independent" of U.S. airlines.

Due to the shortage of flying equipment, Aero Transportes is now flying one round trip four days a week, using eight single-engined Vultees, Stinsons and Wacos. An attempt is now being made to secure twin-engined equipment in the U.S. and the company hopes to operate six such planes. At that time, the single-engined equipment will be used for carriage of cargo (company is now transporting mail, passengers and express) and passengers will be carried in the larger planes. Reachi said he hoped to be able to inaugurate daily service within 60 days.

Passenger fares, he stated, are lower than in the U.S., and vary according to route. The company's intention is to lower them still further and to "popularize the air," he added.

Aero Transportes' franchise was granted by Gen. Maximino Avila Camacho (the President's brother, and Secretary of Communications and Public Works). Routes were authorized and approved Feb. 28, and the company operated preliminary flights for 30 days previous to that date.

Officers and directors of the company include: Reachi, president and general manager; Capt. A. B. Fitzgerald, acting vice president in charge of operations; Samuel A. Markel, second vice president and director; Edmundo Phelan, third vice president; Guillermo Rossell, general counsel and treasurer; Jose Juan Cervantes, director and Luis Aguilar, director.

BRANIFF AIRWAYS carried a record total of 217,885,250 pound-miles of mail during December, 1943. The total, equal to 108,943 ton-miles, exceeds the previous peak mail load of 205,555,469 pound-miles carried in July last year by more than 12,000,000 pound-miles.

Braniff Increases Mexican System to 4,661 Route Miles

ROUTES of Aerovias Braniff in Mexico have been expanded to include 2,018 miles formerly held by Lineas Aereas Nacionales, T. E. Braniff, president of Braniff Airways and Aerovias Braniff, revealed upon his return from Mexico on Feb. 25.

Added to the 2,643 route miles previously granted Aerovias Braniff by the Mexican government, the company now holds operating licenses covering 4,661 miles in Mexico.

Included in the new mileage is a Mexican transcontinental route from Tijuana on the Pacific coast to Matamoros on the Gulf coast, via Mexicali, Nogales, Hermosillo, Chihuahua, Ojinaga, Villa Acuna, Piedras Negras, Nuevo Laredo and Reunosa. Service will also be provided from Matamoros to Tampico, and from Tampico to Monterrey as a result of the acquisition.

"Coordinated schedules over the routes of Braniff Airways and Aerovias Braniff will provide direct air transportation between principal cities of Mexico and the Central and Southwest area of the United States, subject to the approval of the Civil Aeronautics Board," Braniff said.

Jose Navarro Elizondo, formerly head of Lineas Aereas Nacionales, has joined Aerovias Braniff as vice president and member of the board of directors. Other officers and directors elected at a recent meeting of stockholders held in Mexico City are T. E. Braniff, president; Antonio Correa, vice president; C. G. Adams,

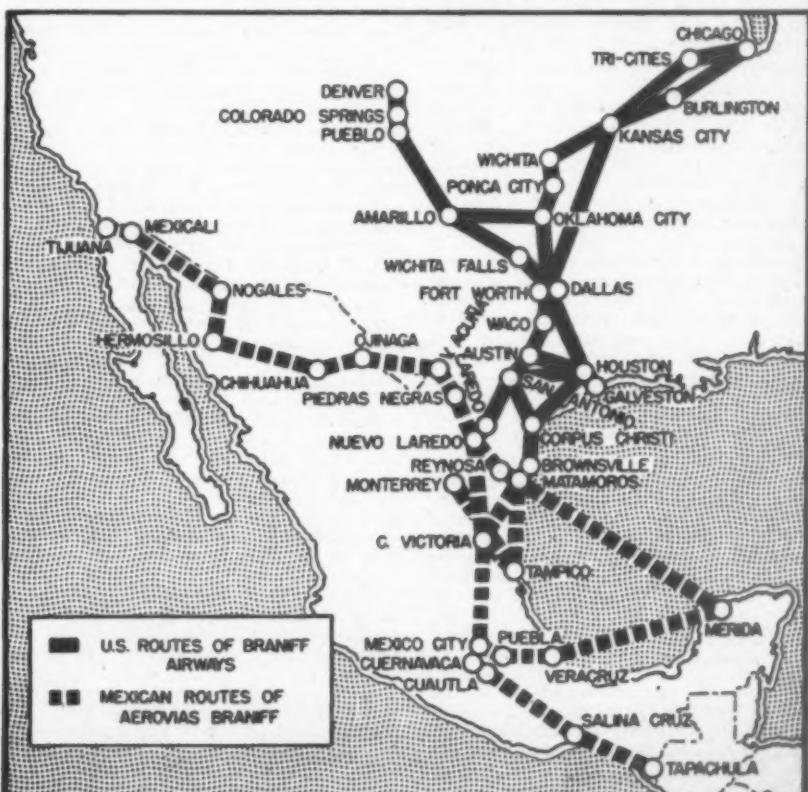
treasurer, and Jess N. Dalton, secretary.

Plans for the activation of personnel training, airport surveys and other activities were made during Mr. Braniff's visit to Mexico, it was said. Personnel training will be carried out in conjunction with the government flight training school operated by the Mexican government at Puebla. This school has been developed through the cooperation of the U.S. Civil Aeronautics Administration as a part of Western Hemisphere war cooperation plans. Other phases of ground training will be conducted in cooperation with other Mexican schools, universities and training organizations.

The company, Mr. Braniff stated, will immediately undertake the construction of communication systems, survey of airport facilities, personnel and navigation requirements. Service will be inaugurated upon completion of necessary ground installation and acquisition of flight equipment.

CAL Officers Reelected

All officers of Continental Air Lines, Inc., were re-elected and Terrell C. Drinkwater was named general manager, as well as executive vice president and general counsel, at the annual meeting held in Los Angeles, Cal. The Board of Directors declared a dividend of 15¢ a share an outstanding common stock, payable March 15 to stockholders of record March 10.



Chicago-Detroit-New York Hearing Raises Big Issues

PRACTICALLY ALL of the issues that confront domestic aviation in the post-war expansion period came to the fore in another seven day CAB hearing recently on new and amended routes involving service between Chicago, Detroit and New York.

Eight carriers—American, Braniff, Colonial, Chicago and Southern, Northwest, Pennsylvania-Central, TWA and United—fought over familiar ground, in that many of these same issues have been in the foreground of most of the recent route proceedings.

The one possible new issue injected in this proceeding was raised by T. E. Braniff, president of Braniff Airways, Inc. This brought out into the open for the first time the controversy which exists over the distribution of the postwar production of Douglas DC-4's and the Lockheed Constellation. Braniff charged that the so-called Big Four have this production tied up and if this situation is permitted to continue, the smaller lines will suffer a great competitive disadvantage in the postwar era of operations.

Braniff said the situation was so serious that either the Civil Aeronautics Board or the Department of Justice should take cognizance of it. Under cross-examination of John T. Lorch, counsel for United, it was brought out that United and some of the other lines together with Douglas Aircraft Co. had expended large sums of money in the technical and engineering development of the DC-4, in explanation as to why these companies might be favored with the first deliveries.

Another issue which loomed large in this hearing was the effort which Northwest Airlines Inc. is making to become a fourth transcontinental carrier. Northwest's application was wholeheartedly endorsed by the New York Port Authority whose witnesses stated that unless this northern transcontinental route is established, both New York and the United States as a whole will suffer a considerable competitive disadvantage to Trans-Canada Air Lines in the postwar development of international aviation. Even if the northern route is granted to Northwest, these witnesses pointed out that Trans-Canada would still have the shortest transcontinental leg of the Great Circle route to Asia and the Orient.

'Economic Balance' Discussed

The question of achieving a better economic balance between the so-called large and small carriers was threshed over many times during the hearing. Mr. Braniff said it was absolutely necessary to a well-balanced aviation program that the smaller companies be permitted to tap the more populous areas. He pointed out that the larger companies not only had the advantage of originating traffic in the larger centers but also sharing the business of the smaller carriers at many points along their transcontinental routes. He further expressed the thought that a connecting service will never be a satisfactory service both because of the inherent difficulties in such an operation and for the further reason that competition at con-

necting points is not in itself conducive to improving such a service.

C. Bedell Monro, president of PCA, argued that it was in the public's interest to effect a better balance between the small and large carriers. Unless permitted to share in the business between Chicago and New York, any reduction in the passenger fare structure might spell economic ruin for his company, Monro declared. The witness said he recognized that reduced fares were a desired goal as far as aviation in general is concerned but he said this might prove fatal to many of the smaller companies if the reductions were made before they had gained economic independence.

Sharp disagreement with the theory that a "connecting service is not a good service" was taken by Charles A. Rheinstrom, vice president in charge of American Airlines, Inc., who testified in behalf of his company's desire to combine its Routes 7 and 21 so that certain non-stop service could be given between Boston and Chicago and Boston and Detroit. He also stated that if a new transcontinental service is needed to serve the northern border of the United States, it should be provided by extending one of the existing transcontinentals from Chicago westward to the Portland-Seattle area.

Would Stress Local Service

Edward S. Ridley, vice president of Colonial Airlines, Inc., told the hearing that transcontinental airlines may not have deliberately failed to give adequate local service but because of their very nature they have concentrated on the long haul business. Colonial is asking for an extension from New York to Chicago and New York to Niagara Falls and Cleveland on two circular routes. His company would stress local service and accept a certificate requiring stops at all of the various intermediate points, Ridley testified.

Explaining that Northwest's proposed transcontinental route would serve eight northwestern states with a total population of 11,124,987, Croil Hunter, president, pointed out that this area alone, of all areas west of the Mississippi River, has been deemed sufficiently important to be served by three great trunkline railroads.

"Air transportation must respond to the same basic need so that this vast and rapidly growing area can have the benefits of transcontinental trunkline air service which are enjoyed by all other areas of equal and even less importance and it must no longer be forced to continue under the present handicap of connecting service through the Chicago bottleneck," Hunter stated. Northwest seeks an extension of its route from Chicago to New York, via Detroit.

Ralph S. Heininger, general traffic manager for Chicago and Southern, testified that another local carrier was needed between Chicago and Detroit. Heininger stated such an extension of his company's service would also permit a greater utilization of the carrier's equipment. He estimated the total annual revenue that such an extension would provide as being \$253,550 above expenses.

"If the reciprocal function existing be-

Found: An 'Honest' Witness

The recent CAB hearing on applications involving new and amended air routes between Chicago, Detroit and New York produced the "honest" witness that all lawyers have been looking for.

After one of the airline witnesses had had a rather tough hour on the stand, he finally responded to a question as follows: "I'll have to be honest. I don't know."

This threw the hearing in an uproar and it appeared the witness did not understand the import of his answer until sometime later when CAB Examiner Francis W. Brown said: "Thank you for your testimony. We are glad to excuse an honest witness."

tween north-south and east-west carriers is to be thrown into discard, the extension of north-south carriers into the east-west traffic market will create a hopeless muddle of the air transport route structure of the country," testified Charles L. Gallo, assistant to the Vice President of Traffic, Transcontinental Air and Western Air, Inc. In this proceeding, TWA sought routes between Chicago and New York, one via Detroit and the other via Cleveland.

Gallo asserted that the national route pattern of this country must be developed on a sound foundation in order that the development of individual route structures may proceed in an orderly and logical manner.

Harold Crary, vice president in charge of traffic, United Air Lines, Inc. was the principal witness for his company. UAL sought a route from Chicago to New York via Detroit and a second route between the same terminal points via Pittsburgh.

Crary and other witnesses testified of the need for a through one-carrier, one-plane service from Pittsburgh and Detroit to the west which would eliminate the inconvenience of connections at Chicago. Such service would also be provided by sleeper planes at considerable benefit to both Pittsburgh and Detroit, the witnesses stated.

EAL an Intervenor

Eastern Air Lines, Inc. was represented in the proceeding as an intervenor. Northeast withdrew its applications affecting this area sometime prior to the hearing.

The hearing was held before Francis W. Brown, assistant chief examiner and William F. Cusick, Harry A. Bowen and Paul Rieber acted as public counsel.

City witnesses took up the entire first day of the proceeding. Wilbur LaRoe, Jr. and Joseph O. Francke, Counsel for the Port of New York authority and Allen Dean, representing the Chamber of Commerce and the City of Detroit, attended all sessions. An elaborate booklet of exhibits was presented by Richard C. Murray, aviation commissioner for the Chamber of Commerce, Kansas City, Mo. who also represented Kansas City, Kan. in the hearing.

PAN AMERICAN AIRWAYS reports that passenger, cargo, and mail service between Puerto Rico and the United States has been sharply increased with the inauguration of a second daily Miami-San Juan-Miami round trip schedule.

Airline Attorneys Wish Washington Would Build Larger Conference Rooms

The thing that Washington needs most has been debated publicly and privately for many years. Washington newspapers have frequently expressed a belief it should be a convention hall big enough to hold 10,000 people.

Airline attorneys are willing to settle for much less. All they want is a good hearing room—a hearing room with tables and seats for everyone having some part in the presentation of new route cases.

When a full blown hearing is held, the small room at the back of the Department of Commerce auditorium is far too small. Usually the hearing is then assigned to a conference room at the rear of the Department of Labor auditorium. And it never fails to happen that sometime during the hearing, a musical concert or band program is given and paradoxically, the harmony in the main auditorium becomes simply discord in the hearing room.

And like as not, the examiner will announce at the close of a day's session: "We will reconvene at 10 a. m. tomorrow in Room So and So of the Post Office department," and next morning some attorney who has been fighting all night with his competitor's case exhibits will forget and turn up where the hearing ended the night before.

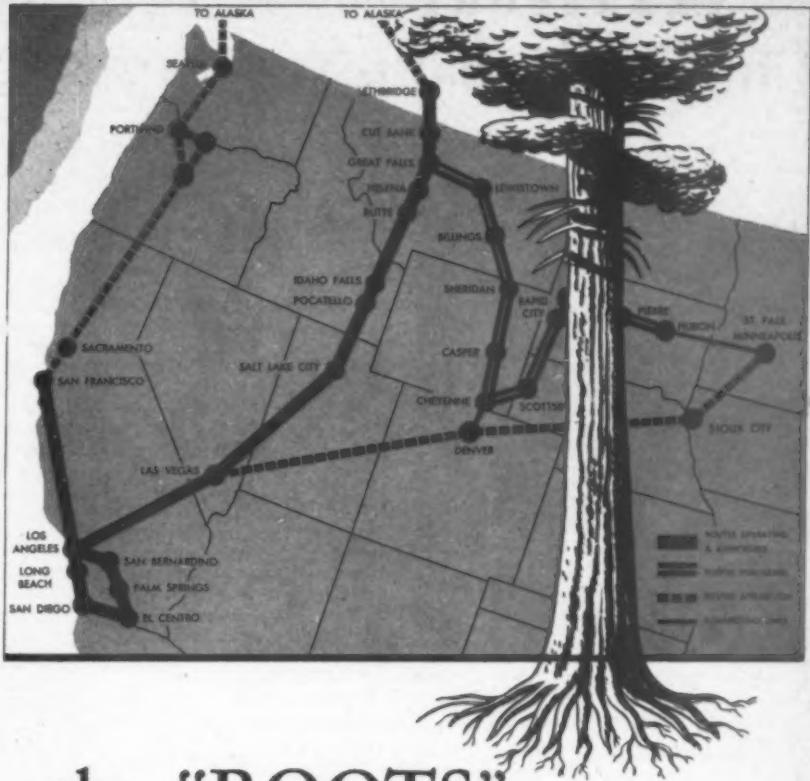
CAB Orders Rehearing

In PAA-Latin American Airmail Earnings Case

The Civil Aeronautics Board has issued a new order reopening for the purpose of rehearing, reargument and reconsideration the case involving the rate of compensation to be paid Pan American Airways, Inc. for the carriage of air mail on the Latin American routes and determination of excess earnings for a certain period.

Under date of Aug. 28, 1942 the Board issued an order and opinion fixing and determining the fair and reasonable rates of compensation for transport of mail by aircraft on and after Sept. 1, 1942. Pan American filed petitions for rehearing and reargument Oct. 22, 1942. The Board on Nov. 25, 1942 issued an order granting rehearing on certain limited issues but in its new order, it found that review and revision of the rate previously fixed and the determination of the amount of excess earnings for the period Aug. 22, 1939 to Aug. 31, 1942 is not now within the scope of the issues pending before the Board. Hence the new order embraces all of the issues touched upon in the original determination.

AIR EXPRESS DIVISION, Railway Express Agency, reports that air express shipments flown in and out of La Guardia Airport in January were up 25.9% over January, 1943. A total of 54,336 shipments were handled for the nation's commercial airlines, an average of 1,725 per day. Gross revenue totaled over a quarter million dollars for a gain of 35.2% over January last year. These gains were attributed to increases in average weight and length of flight of individual shipments. Combination rail-air express traffic handled by RRA for the airlines during the entire past year gained 28.3% over 1942.



the "ROOTS" of a growing Airline!

Actually these are both the "routes" and "roots" of America's Pioneer Airline...now in its 18th year of constant, healthy growth.

These Western Air Lines "routes" are nourished by the West...and, in turn, will bring to fruit the buried energy and natural resources of many communities whose growth will be increased by more and faster transportation.

War has brought spectacular changes in the economy of the West. Factories, raw materials, power, labor supply and management have leaped ahead many years. But Western Air Lines is ready for these changes...its new "routes" await only the first spring thaws of Victory; the release of air transport planes from war's more urgent needs and C.A.B. approval on other new extensions for tomorrow. For, Western Air Lines is *The West's own airline*.

General Traffic Offices: 510 West 6th Street, Los Angeles 13, California

WESTERN AIR LINES

America's Pioneer Airline

TRANSPORT

Women in Air Transport

(This is the twelfth of a series of articles on women who are doing an outstanding but little publicized job for the U. S. airlines.)



"Myrt" Stephens is probably as well known among United Air Lines' employees at Chicago headquarters as any of the company's officers.

For more than a decade—12 years, to be exact, Myrtle Stephens has been at United's telephone switchboard. She is known far and wide throughout the UAL system.

Born in Chicago and educated in the Chicago public schools, Myrt took a business course and then turned to accounting. Later, however, she joined United and has been there ever since. She started with United when it was in its adolescence, and now heads a department comprised of nine girls.

Through the big board before her come more than 600 calls daily—calls from all points along the UAL system. She estimates the mileage represented in a day's calls at twice around the world.

Your voice, Myrt claims, is as distinctive as your fingerprints. "Everyone's voice is that way," she explains. "No two are alike. There is something in the pitch or in the timber or in the inflection—something—that makes the various voices distinctive. I can remember your voice indefinitely after I've talked to you for a few minutes. To do a job at this switchboard, one just has to do that. A switchboard operator has three commandments. She must know voices and names, must know where to connect people for information and must keep cool at all times regardless of the stress of the work on the board."

In addition to being one of the best airline switchboard operators in the business, Myrt Stephens is noted for her Irish wit. In this department she can hold her own with anyone, from the executives down to the office boys. Ask someone who has tangled with her.

New Name for Georgia Air Service

Georgia Air Service, Inc., has changed its name to Southeastern Air Service, Inc., "to more accurately describe the scope of activities now engaged in by the company." Cody Laird, president, emphasizes that there is no change in personnel, service, operations, or locations.

Airline Commentary

We break precedent this issue and publish a drawing in this column . . . It all came about when we received a letter the other day from Eldon Frye, TWA's cartoonist, who has been mentioned frequently by us . . . Instead of trying to explain this picture, we're printing Eldon's letter in full . . . In reading it, please remember that Frye has a dry, Kansas humor and isn't taking a serious stand on the landplane vs. seaplane question . . . Here's the letter, so hold onto your hats!

"It is rather hard for people to take a cartoonist seriously, but I am enclosing a thing which, to say the least, is thought provoking. I suppose some skeptics will laugh at it and I say let them laugh. It will be another matter when they find themselves pancaking into the ocean in the conventional landplane some day.

"Now, Bramley, the idea is to prevent those terrible crash landings in which the aircraft sinks almost immediately and the inmates thereof are, to say the least, bruised. Turning the matter over in our minds this morning, George Kane, a new member of our department who used to be a navigator, and I stumbled, or rather blundered, onto a very simple solution. All that is necessary is to design a plane with a seaplane bottom on top of it, and land it upside down!

"Our sketch shows the ship making a sea landing. Ordinarily in such circumstances the landing gear would be closed or retracted and it would be a much cleaner

SWINSON & BRAMLEY



looking ship. For the purpose of explanation, however, we have shown it extended. Turn the sketch over and you will see it as a landplane coming into an airport.

"The only inconvenience to the passengers and crew would, of course, be the relatively short period in which they would have to hang upside down in their seats, but I should think they would rather go through that than a crash landing. Comfortable shoulder straps could be provided, and the ceiling could be padded so that when they released themselves and dropped out, the fall would be cushioned. The pilot, instead of saying, 'prepare for a crash landing', would merely say, 'prepare for an inverted landing.'

"In view of the tremendous planning of postwar over-ocean flying we think this is a tremendous forward step in air safety and would result in considerable reduction of insurance rates. If the hull and windows were water-tight, the ship would float for an indefinite period before sinking. Of course, pilots would have to be taught inverted landings, and navigators would have to learn to navigate upside down, but that is not impossible. The controls merely work backward.

"You will note that the plane, inverted, becomes a high-wing ship, which also has its obvious advantages. There may be a few bugs in the idea, but it could be accomplished with a minimum of fuss and fol-de-rol. What am I saying?"

There it is readers . . . Pay your money and take your choice . . .

Those of you who know Leo Dwerlkotte, Western Air Lines' executive vice president, and Tom Wolfe, WAL's vice president-traffic, will appreciate this story . . . Dwerlkotte, it seems, was "arrested" in Cheyenne recently . . . Tom Wolfe gagged the whole thing with his good friends T. Joe Cahill, former long-time Cheyenne police officer, and unofficial city greeter, Deputy Sheriff Valle Ward, and cohorts . . . So well did he plan it that Tom let himself be "arrested" along with Dwerlkotte, on "suspicion" . . . False papers and currency were planted on Dwerlkotte, and when the train came to a stop at Cheyenne, officers boarded and entered Drawing Room E to handcuff and drag out the unsuspecting vice president . . . News photographers, in on the gag, set off much flashing of bulbs, and a crowd quickly gathered to see alias the "Leomidas D. Youtsey," ours truly, Mr. Dwerlkotte . . . Leo is a brilliant guy, but they really had him going for a while, and we would have loved to have been there . . . We understand that Leo is taking an unmerciful ribbing—but taking it gracefully . . . Strange things certainly happen in this industry . . .

ERIC BRAMLEY.

Why VIP* Fly



*VIP is Army slang for "very important people".

The greater their importance,
the greater the need
to measure their journeys
by time — not distance.

That means AIR TRAVEL.

VIP means Presidents,
Prime Ministers,
Secretaries of State,
Diplomats, Senators,
Secretaries of War, and Navy,
Generals, Admirals, Technicians.

Yes, and VIP means the wounded
flown to base hospitals,
troop reinforcements
and paratroops.

When the war has been won
you, too, will be VIP,
for you will measure your journeys
by time — not distance.

Then again your seat
in a Douglas transport
will be just as important
as any famous person's
going your way.



Douglas AIRCRAFT

Santa Monica, Calif.

Long Beach El Segundo, and Doggett, Calif., Tulsa, Oklahoma, Oklahoma City, Chicago
Member, Aircraft War Production Council, Inc.

These World-Wide Airlines Are Douglas Equipped: American Airlines . . . Braniff Airways . . . Chicago & Southern Air Lines . . . Colonial Airlines . . . Delta Air Lines . . . Eastern Air Lines . . . Western Air Lines . . . Northeast Airlines . . . Northwest Airlines . . . Pan American Airways . . . Pennsylvania-Central Airlines . . . Transcontinental and Western Air . . . United Air Lines . . . China National Airways . . . Pan American-Grace Airways, Inc. . . . Avianca (Aerovias Nacionales de Colombia) . . . Cia. Mexicana de Aviacion . . . Panair Do Brazil . . . Cia. Nacional Cubana de Aviacion, S. A. . . . Urabá,

Medellin and Central Airways, Inc. . . . Cruzeiro do Sul (Brazil) . . . Primera Lineas Uruguayas de Navegacion Aerea, S. A. . . . Aerovias de Guatemala, S. A. . . . Canadian Pacific Airlines, Ltd. . . . Australian National Airlines . . . Royal Dutch Airlines (K.L.M.) . . . Royal Netherlands Indies Airways (K.N.I.L.M.) . . . Sabena (Belgian Congo) . . . Swissair (Switzerland) . . . A. B. Aerotransport (Sweden) . . . Indian National Airways (India) . . . L.A.P.E. (Spain) . . . Aer Lingus (Ireland) . . . American Airlines of Mexico . . . British Overseas Airways Corp. (BOAC) (England).

It all
s car-
xplain
ember
dplane

sing a
s will
y find

ch the
least,
a new
rather
plane

tances
leaner

MAR

ended.
e the
seats,
nding.
added
ioned.
repare

ck this
duction
l float
caught
n, but

a also
ld be

ice
his
om
ng-
ile
d"
ed
ed
ed
ice
he,
a
nt
angs

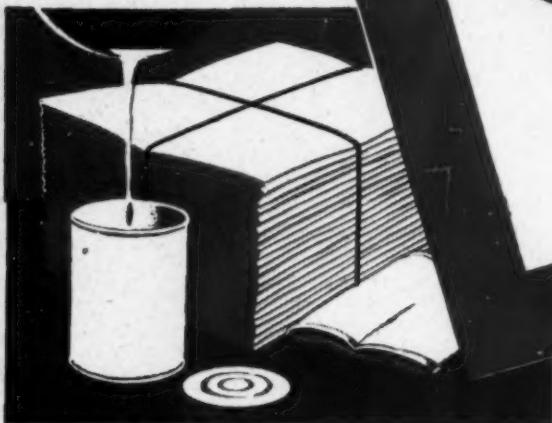
944



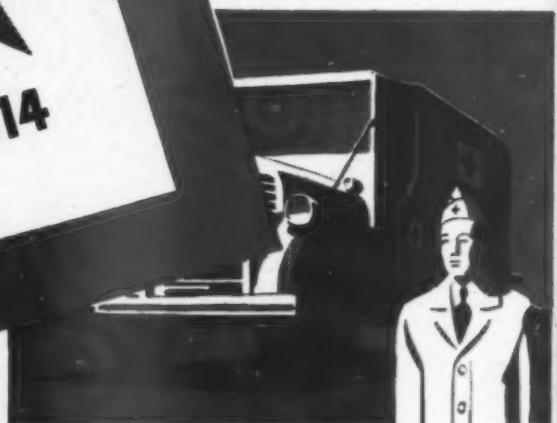
BLOOD DONATIONS by the hundreds have been made by Breeze workers to the Red Cross Blood Bank.



WAR BOND DRIVES have been enthusiastically supported in addition to payroll deduction purchases.



SALVAGE CAMPAIGNS both at home and at their work are aided by the efforts of Breeze men and women.



RED CROSS ambulance, station wagon and special car donated by management of Breeze to Motor Corps.

Our Third Front

VICTORY DEPENDS ON WHAT WE DO AT HOME AS WELL

THERE is a Third Front, here at home, on which the men and women of Breeze are fighting. Putting 10% and more of their pay in war bonds, giving blood regularly to the Red Cross Blood Bank, cooperating to the fullest extent in civilian defense activities and government war campaigns, Breeze workers are a part of the great team that is backing up the boys at the front.

Without this teamwork, the efforts of our fighting men might well be wasted.

And in addition to their outside work, the men and women of Breeze are on the job day and night, turning out in tremendous quantities the well-known Breeze products which are serving America today on fighting fronts the world over.

Breeze
CORPORATIONS, INC.
NEWARK, NEW JERSEY

PRODUCTION FOR VICTORY • PRODUCTS FOR PEACE



A Few of the Many Breeze Products in the Nation's Service

Radio Ignition and Auxiliary Shielding • Multiple Circuit Electrical Connectors • Flexible Shielding Conduit and Fittings • Cartridge Engine Starters • Internal Tie Rods • Elevator and Rudder Tab Controls • Flexible Shaft and Case Assemblies • Aircraft Armor Plate

Many Types of Air Services Proposed by 13 Applicants

PRACTICALLY ALL TYPES of air transport operations are proposed in the 13 applications which were submitted to the Docket Section of the Civil Aeronautics Board during the period from Feb. 11 to and including March 6th.

Among the more novel applications is one submitted by Vair Service of Seattle which proposed non-scheduled operations from a base on Lake Washington to islands in the Puget Sound area.

Sage-Allen & Co. of Hartford, Conn. joined the growing list of department stores which seek a CAB certificate to operate helicopter routes for the delivery and collection of merchandise.

The Yellow and Checker Cab Co., of San Francisco—a firm which claims to have operated 1,200 cabs over 46,000,000 taxicab miles during 1943, asked for a certificate to conduct an aircraft taxi service in California and five other western states.

All American Aviation, Inc.

This carrier filed an application requesting that its certificate for Route 49 be amended so as to include Athens, Ohio as an intermediate point between Parkersburg, W. Va. and Pomeroy, Ohio. (Docket 1327)

Atlantic and Carolina Airways Co.

L. B. Jenkins, president of this company, of Kinston, N. C., filed for the following routes: Washington, N. C. to Wilmington, via Greenville, Wilson, Raleigh, Dunn and Fayetteville; Beaufort to Wilmington, via New Bern, Kinston, Raleigh-Durham, Greensboro, Winston-Salem, Charlotte and other intermediate points. The company asked a certificate to carry persons, property and mail. (Docket 1332)

Charles R. Bentley

This individual of Box 778 of Lakeland, Fla., filed in behalf of a corporation which will be organized later under the name of Southeast Airlines Feeder Service, Inc., of Tampa, for an extensive feeder route system which includes such larger cities as Tampa, West Palm Beach, Ocala, Orlando, Ft. Myers, St. Petersburg, Sarasota and many smaller cities. The company would have authorized minimum capital stock of \$500,000 subscribed at the time the corporation is formed. Applicant proposes to use twin engine and single engine planes. (Docket 1330)

Braniff Airways, Inc.

This carrier has filed an application asking amendment of its certificate for Route 9 to include Ottumwa, Iowa as an intermediate point between Kansas City and Moline, Ill. (Docket 1329)

Buffalo Aeronautical Corp.

P. Leslie Marsden, president of this company, Buffalo Airport, Buffalo, N. Y., filed for routes between Buffalo and the following terminal points: Newark, N. J., Pittsburgh, Williamsport and a circular route originating and terminating in Buffalo, via Syracuse, Oswego, Niagara Falls. Scores of intermediate points are asked and the total mileage is listed as 1332. Mail, passengers and property would be carried. (Docket 1333)

Lehigh Aircraft Co.

This applicant of Allentown-Bethlehem Airport, Allentown, Pa., asked for six circular routes out of Allentown, to carry mail,

passengers and property in twin-engine Beechcrafts, on 968 miles of route. (Docket 1334)

Nebraska Airlines

This carrier of 2415 "O" Street, Lincoln, Neb., has filed for an air transport route to carry mail, passengers and property over a circular route from Omaha, via North Platte and other cities to Scottsbluff, Alliance and Chadron and return to Omaha, via Ainsworth and other cities. E. J. Sias is president of the company which now operates the Lincoln Airplane and Flying School. The applicant plans to use twin-engine planes of the Beechcraft AT-11 type. (Docket 1321)

Sage-Allen Co.

Located at 894 Main Street, Hartford, Conn., this company filed an application requesting six circular routes out of Hartford. The company would use the helicopter in the delivery and pickup of merchandise. (Docket 1323)

Van Meter Streeter & Co.

Applicant of Fergus Falls, Minn., filed an application for air transport routes between Minot, N. D. and Minneapolis; Pierre, S. D., to Duluth; and Devils Lake, N. D., to Sioux Falls, S. D., in which many intermediate points were named. The application was filed by Thomas C. Van Meter, partner and manager, who said the company proposed to use single-engine aircraft in daylight operations. Persons, property and mail would be carried. (Docket 1328)

Vair Service

Applicant of 6523 Windermere Road, Seattle,

Blaa

British shipowners evidently are not familiar with the fact that airline companies make wide use of their initials when referring to each other. Otherwise, says the British magazine *The Aeroplane*, five British shipping companies might have thought again before naming their proposed airline "British Latin American Airlines," which shortens up to a very unromantic "Blaa."

Washington, through Rolland Denny Lamping, a private pilot, applied for a certificate to engage in non-scheduled operations from a base at Lake Washington to points in Puget Sound, Straits of Juan de Fuca and the islands therein. The applicant proposes to use 0-80 hp. class of planes. (Docket 1326)

Watkins & Rutledge

These partners of El Paso, Texas, filed for air transportation of passengers, mail and express between El Paso and Austin, via Pecos and San Angelo—a distance of 545 miles. (Docket 1324). In a second application, they request a similar certificate for a route between El Paso and Brownsville, via Marfa and Del Rio—a distance of 710 miles. Applicants plan to use Douglas DC-3 equipment. (Docket 1325)

Yellow & Checker Cab Co., Con.

This company of 245 Turk Street, San Francisco filed with CAB an application for a certificate to conduct an "Aircraft Taxi Service" in California, Washington, Oregon, Idaho, Nevada and Arizona. W. Lansing Rothschild, company president, said the company had operated 1,200 cabs over 46,000,000 taxicab miles in 1943. Applicant proposes to operate as a local and feeder service. (Docket 1322)

Pushing Aerovias Argentinas Deal



On the arrival of Lowell Yerex in Buenos Aires recently to open negotiations with the Argentine government for the operation of the new airline, Aerovias Argentinas, the above photo of the founder and president of TACA and his associates was taken. Left to right—Dr. Roberto Garber, legal counsel for Aerovias; Hugh Cowtan, of TACA, who is organizing Aerovias; Lt. Col. Dario Becerra Moyano, member of the Aerovias board; Eduardo Bradley, president of the Aerovias board; Yerex; and Robert Reed, vice president of TACA.

Airline Tax Exemptions Unchanged As Result of Congressional Revolt

EXCESS PROFITS TAX exemptions of the airlines remain on the same basis as in the past as a result of the action of Congress in overriding the President's veto of the new tax bill.

The President, in his veto message, had said of this provision that "commercial airlines are granted an unjustifiable extension of the tax subsidy on their air mail contracts."

Rep. Daniel A. Reed (R., N. Y.), in a subsequent speech in the House, presented the case of the airlines and said that the provision in the new tax bill was nothing more than "a perfecting technical amendment" to existing law.

Reed said in part:

"The one thing we had when war came that was ready for war on a minute's notice was the civil airline industry. Without the need for long delay and painfully drawn out preparation, that industry afforded us transport aircraft and trained men for use throughout the world. The reason for this is to be found in two acts of Congress. One was the Civil Aeronautics Act of 1938. The other was a provision of the original Excess-Profits Tax Act.

"The 1938 act provided for mail compensation fixed by the Civil Aeronautics Board so as to enable the airlines to prepare for the national defense. This meant buying equipment, expanding organiza-

tions, extending routes, and laying the ground work for mobilization to do the wartime tasks for which the civil air lines are so peculiarly qualified.

"The 1940 Excess Profits Tax Act would, however, have resulted in defeating the purpose of the 1938 act, by simply taking away what Congress had provided for in 1938, had it not been for a provision we included therein. That provision was that the tax would not apply to an airline in a given year unless the nonmail income alone is such as to give an airline adjusted excess-profits net income.

"The amendment to this provision made in the act which the President has vetoed is only a perfecting technical amendment. The present law subjects the airline to the tax if in a single year, due to temporary abnormal conditions, its nonmail income jumps—even though in prior and subsequent years that income is low. So, by the amendment, we would provide simply that for the purpose of figuring the excess-profits credit to be carried over or carried back in determining the airline's status in the tax year there shall also be the mail pay exclusion. Thus the airline will be dealt with in the light of its experience over the period of the carry-over and carry-back years, which is entirely consistent with sound tax policy, and indeed, with the theory of the Excess Profits Tax Act itself."

Littlewood Succeeds Dr. Mead on NACA

William Littlewood, vice president of American Airlines, Inc., has been appointed by President Roosevelt a member of the National Advisory Committee for Aeronautics for a term of five years, succeeding Dr. George J. Mead.

In addition to his duties as vice president-engineering of American Airlines, Inc., Littlewood currently serves in the following capacities: Chairman, Air Transport Engineering Activity-SAE; Chairman ATA Committee on Airport Requirements; Chairman, Aircraft Accessories and Equipment Subdivision-SAE; Member: Coordinating Research Council; Advisory Board I.A.S.; Wright Brothers Medal Board of Award-SAE; Guggenheim Medal Board of Award; Clarkson Memorial Committee-SAE; M.I.T. Visiting Committee-Dept. of Meteorology; Council, Cornell Society of Engineers.

NORTHWEST AIRLINES' report for January reveals 9,652 revenue passengers carried, an increase of 5,626 over the same month last year. Revenue passenger miles totaled 6,739,959 during the month as compared with 2,612,853 in January, 1943. Airmail carried totaled 491,655 pounds, an increase of 202,576 pounds for the same month a year ago.

WESTERN AIR LINES reveals that revenue passenger miles flown during January increased 103% over the same month last year. Western flew 2,951,258 miles, compared with 1,453,780 miles in January, 1943.

Continental Air Lines Announces New Wartime Service between **DENVER** and **KANSAS CITY** via SALINA* and TOPEKA

On March 1, Continental Air Lines inaugurated direct air service between Denver and Kansas City... bringing improved transportation for passengers, air mail and express between four more important Western cities.

In this new daily roundtrip service, Continental pledges a continuation of that high standard of operating efficiency which has achieved outstanding national recognition in the field of commercial aviation.

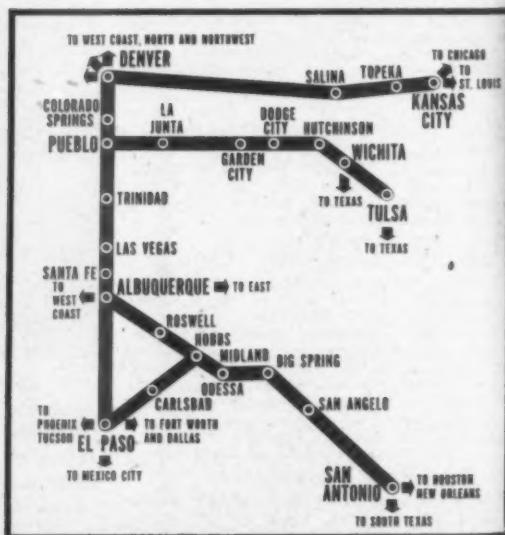
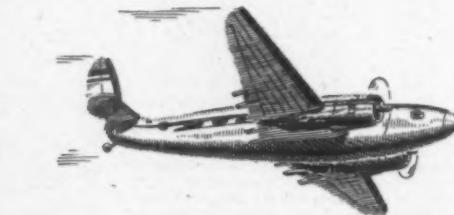
Fares and Flying Time

	One Way
Denver-K.C., 3½ Hours—K.C.-Denver, 4 Hours	\$27.95
Denver-Topeka, 3 Hrs.—Topeka-Denver, 3½ Hrs.	25.20
Topeka-K.C., 25 Min.—K.C.-Topeka, 28 Min.	3.30

*Inauguration of service to Salina temporarily delayed.

CONTINENTAL AIR LINES

Serving the West



"Another Martin First!"

Martin-Developed Flooring Saves Precious Pounds in Planes



Despite its lightness, Martin plastic flooring is strong, rigid. Here a thin sheet supports a girl's weight without bending or sagging.

A NEW plastic flooring, which will permit airlines to carry hundreds of pounds more payload, is the latest in the parade of developments coming from Martin laboratories. Through a licensing agreement with The Glenn L. Martin Company, this lightweight plastic flooring is now being manufactured by the Panelyte Division of the St. Regis Paper Co.

TOUGH LIGHTWEIGHT

Made from laminated phenolic sheet reinforced with aluminum alloy strips, this new flooring weighs approximately $\frac{1}{4}$ lb. per sq. ft. less than other types of flooring of equal strength and carrying capacity. To equal the strength of this product weighing .885 lbs. per sq. ft., it would be necessary to use a plywood flooring weighing 1.15 lbs. per sq. ft., or a corrugated metal flooring weighing 1.28 lbs. per sq. ft.—nearly half again as much.

ECONOMICS

Since the flooring area of a modern 24-passenger airliner is approximately 1700 sq. ft., this represents a weight savings of 143 lbs. Translated into terms of passengers and cargo, this weight saving, over the life of the plane, adds up to the sort of figures that no postwar airline operator can afford to ignore.

OTHER USES

In addition, this new plastic is ideal for catwalks, benches and table-tops. Either smooth or rough finish to prevent slipping, and in varying thicknesses.

Now saving precious weight in Martin-built war planes, this flooring development promises great things for the future, not only in commercial aviation, but throughout all industry. Once again Martin research is blazing the trail to tomorrow!

THE GLENN L. MARTIN COMPANY, BALTIMORE-3, MD., U. S. A.
THE GLENN L. MARTIN-NEBRASKA COMPANY—OMAHA

Martin
AIRCRAFT
Builders of Dependable Aircraft Since 1909

Unpaved Runways Adequate for Small Fields, PAA Engineer Says

SMALL CITIES desiring air service, but faced with the problem of keeping airport costs down, should investigate the possibility of using grass-covered runways with mechanical stabilized bases, according to Arthur Ayres, airport engineer of Pan American Airways.

Runways as proposed by Ayres would be paved only 500 ft. on each end, where planes maneuver for takeoff and after landing. A 4,000-ft. runway of this type, he believes, can be constructed for \$45,000 to \$60,000, compared with cost of \$200,000 to \$500,000 for the average paved runway.

In order to further lower costs on small airports, Ayres also suggested "a complete reversal of present loading procedures"—transporting passengers and freight to the airplane on the end of the runway. This would eliminate costly taxiways, and would also result in savings to the airlines, he pointed out.

Ayres expresses his ideas on airport construction as follows:

"The majority of aviation magazines and Sunday newspapers you read nowadays are publishing articles and presenting plans of super-airports proposed for post-war development by various cities. Design engineers are planning runway layouts to accommodate the arrival and departure of over 200 planes per hour, as well as huge terminal buildings to serve the traveling public.

"The original cost of construction and future maintenance of such enormous facilities is not questioned, or probably the cities assume that the Federal Government, through some public works agency, will allocate funds for airport construction and maintenance after the war as they have been doing in the past.

"It is generally agreed that we will require a number of large airports at central traffic locations, equipped with runways having lengths of possibly 7,000' to 10,000'. However, it is my impression that any clear thinking airline executive

would hesitate to predict beyond a period of five years as to how many such airports would be required or what the number of arrivals and departures would be for any particular location.

"There is, however, one phase of air transportation which can be planned at this time without too much guess work, and that is planning and preparing for shuttle operations between the small communities located in the United States and foreign countries which will eventually be demanding air transportation service. In my opinion, our greatest airline expansion under postwar conditions will take place in shuttle operations. The success of these operations, from a financial standpoint, will depend upon the amount of investment required for airport facilities. These must be constructed at a minimum cost as the volume of business received from small communities located on shuttle routes will be scattered over wide areas and operation costs will not justify a large investment in ground facilities.

"Unfortunately, very little consideration or research has been given to the promotion of economy in airport construction by city and state planning groups. This is probably due to the large allocation of funds made by the Government to cities and states for development of airports. However, if or when a privately owned airline company or the small town is faced with the necessity of constructing airports with their own funds, in order to give or obtain airline service, economy must be given primary consideration.

"Several of our domestic airline companies have had the sad experience of endeavoring to develop airport facilities with their own funds during the early pioneering of air routes. Pan American Airways, through its early experiences in the Latin American countries found itself confronted with many serious financial problems in connection with the establishment of airport facilities. They were not

only faced with the difficulty of transporting materials and equipment to the airport locations, but the shipping rates were so high that materials cost from three to four times more than their original value would have been in the United States.

"In order to combat these conditions both domestic and international, airport engineers, as well as city and state engineering departments, must give more attention to the development of suitable landing areas constructed with good mechanical stabilized bases, using as far as possible, local aggregates and soils blended in proportionate amounts to produce desired effects. It is realized that the U. S. Bureau of Roads and various State Highway Departments have made extensive research along these lines, however most stabilized bases of the type mentioned have usually been protected by a good pavement which greatly increases the cost, something which must be minimized in shuttle fields if possible. In my own experience in the construction of airports in the Latin American countries, where rainfall amounts in many places to over 100" per year, it was found that the three primary factors concerned in the construction of landing strips or runway bases are:

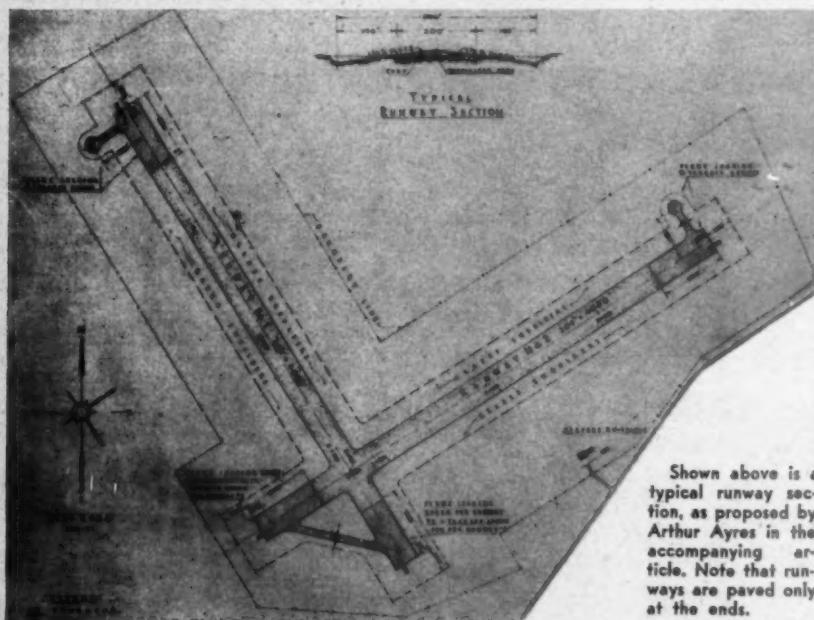
1. The installation of good drainage.
2. A well designed boulevard section with gradients of 1 to $1\frac{1}{2}\%$ to give good hydraulic slopes.
3. A careful controlled selection of aggregates and soil proportionately blended and laid in place as a water bound Macadam surface.

"Landing strips constructed in this manner, when covered with grass to prevent erosion, have and should prove economical and extremely satisfactory for shuttle type fields designed for operation of aircraft having total provisional gross weights of 25,000 to 30,000 pounds. On these types of unpaved landing strips our next problem concerns the areas where aircraft will maneuver for takeoff or after landing. The only practical way in which rutting can be overcome is by paving the ends of each runway 500 feet by 150 feet, to provide a surfaced area for turning and to be used in the initial run for takeoff. It would also be desirable for pilots to contact these areas with their wheels when landing to start them in motion and eliminate rutting of grassed areas. They should also keep their airplane moving until they reach the paved area on the other end of the runway. Trained pilots should have no difficulty in following such procedures.

"Another costly item in airport development is the construction of taxiways leading from the runway to loading aprons. In airports of the shuttle type where flight operations are limited to one or two schedules a day, a complete reversal of present loading procedures should be adopted, i.e., transporting passengers and freight to the aircraft which could remain parked on one of the unused runway paved areas or on an area especially provided for this purpose adjacent to the runway, as shown on the plans. Such procedures would eliminate the cost of constructing taxiways and save considerable time and fuel now wasted in taxiing long distances; besides, curtailing the wear

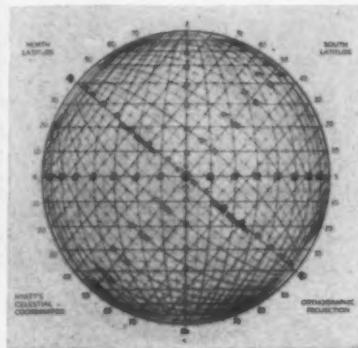
Shown above is a typical runway section, as proposed by Arthur Ayres in the accompanying article. Note that runways are paved only at the ends.

(Turn page)



Air Navigators

★ ★ ★



Hyatt's Celestial Coordinator is to Celestial Navigation what The Slide Rule is to Engineering \$5.00

are urgently needed to fly American planes to all corners of the world and to man the nation's expanding Air Force.

- Learn air navigation by studying the Weems System of Navigation which is now used extensively by the United States and other governments, by commercial airlines, and sportsmen pilots.
- Prepare now for one of the better positions which will be available in an expanding commercial aviation.
- You may avail yourself of the Weems System through either our home study course, residence course at Annapolis, or through perusal of our books.
- Weems equipment may be ordered direct or through dealers in the following cities: New York, N. Y.; Houston, Tex.; Seattle, Wash.; Los Angeles, Calif.; Chicago, Ill.; Detroit, Mich.; Baltimore, Md.; Philadelphia, Pa.; Washington, D. C.; Lincoln, Neb.; Miami, Fla.; Denver, Col.; and Salt Lake City, Utah; also in Vancouver and Ottawa, Canada.
- You who wish to further your present knowledge of navigation will find many of the texts and instruments used in the Weems System invaluable and may purchase these separately without necessarily taking the full air navigation course.

Be Prepared! Know Your Navigation! Get A Head Start!

SEA AND AIR NAVIGATION TEXTS, EQUIPMENT AND INSTRUCTION

AIR NAVIGATION. This is the famous Weems Gold Medal Text Book. It is a standard text book on air navigation and clearly and thoroughly surveys the four principal methods of air navigation: Piloting, Dead Reckoning, Radio Position Finding, and Celestial Navigation and Meteorology. Used as a text book at schools, colleges, etc. \$3.50

MARINE NAVIGATION. New text covering latest methods \$5.00

LEARNING TO NAVIGATE. Elementary Marine Navigation Text \$2.00

SIMPLIFIED CELESTIAL NAVIGATION. Written for the Air Navigator. Weems & Link \$1.50

RADIUS OF ACTION OF AIRCRAFT. Tornich \$3.00

INSTRUMENT FLYING. Zweng & Weems \$4.00

SHORT HISTORY OF NAVIGATION \$1.50

AIR NAVIGATION OUTLINE. Prof. F. W. Keator, Yale University \$2.00

NAVIGATION CHARTS. Series of 5 New Skeleton Navigation Charts. Scale, 1:5,000,000, for both north and south latitudes and covering the earth. Suitable for Dead Reckoning and Radio Navigation. Chart No. 1, Lat. 0 to 30°; Chart No. 2, Lat. 25 to 55°; Chart No. 3, Lat. 50 to 80°; Chart No. 4, Lat. 75 to 90°; Chart No. 5, Lat. 30 to 53° (Extension of No. 1). Price per chart \$1.00

AIRCRAFT PLOTTER, MARK II. (Department of Commerce Type). Especially designed for use with the Department of Commerce Aeronautical Charts. Scales 1:1,000,000 and 1:500,000 \$2.00

NAVIGATION NOTE BOOK. A standard work book, journal and log for sea and air navigators \$2.00

COMBINATION: NAVIGATION NOTE BOOK AND PLOTTER \$3.50

UNIVERSAL PLOTTING SHEETS. Per doz., or in pads \$0.50

SPEED-TIME-DISTANCE CALCULATOR \$1.00

WSN COURSE PROTRACTOR \$5.00

DALTON MARK VII COMPUTER \$7.50

DALTON MARK VIII COMPUTER (PLASTIC) \$1.00

DALTON TYPE E1-B COMPUTER \$10.00

DALTON MK. II, III AND IV PLOTTING BOARDS, respectively \$8, \$18 AND \$12

GILLMER COMPUTER \$3.00

E-6 B PLOTTER (PLASTIC) \$10.00

MARK III-A PLOTTING BOARD \$12.00

NAVY PLOTTER NO. 641 \$1.25

NAVY PLOTTER NO. 700 \$1.50

LINE OF POSITION BOOK. One of the quickest and easiest methods of finding the altitude and azimuth of a heavenly body \$1.50

ILLYNE STAR CHART. 31 by 31 inches with descriptive booklet for finding and learning the navigation stars \$1.00

STAR ALTITUDE CURVES. This original method affords the quickest and simplest means of determining position by the stars. A fix may readily be determined in one minute. In ordering, specify the 10° band of latitude desired. 3rd ed., 1940. Larger scale. 3 colors. Completed for 5° S. to 70° N. Per 10° band of latitude \$5.00

HYATT. A Navigators Introduction to Astronomy \$2.50

WRIST MODEL SECOND-SETTING WATCH. Bezel setting, with large central second hand. Especially designed to permit easy reading. For general use as well as for Navigators (Longines) \$65.00

THE AMERICAN AIR ALMANAC. Published quarterly. Data for each day on separate sheet. Per quarter \$1.00

BROWNELL-WEEMS STAR FINDER \$5.00

OBSERVOSCOPE for star knowledge and identification \$20.00

LINK BUBBLE SEXTANT, averaging with priority \$262.00

WEEMS SYSTEM *of* NAVIGATION

ANNAPOULIS, MARYLAND

(Continued from preceding page)
and tear on motors and breaking equipment.

"It is urgently recommended that state aviation groups be encouraged to immediately request their State Highway Planning Departments to investigate all methods of mechanical stabilized bases with grass surfaces which will withstand the minimum of 15,000 pound wheel loads under all conditions, as they will undoubtedly be called upon in the near future by many small cities for technical advice on developing a low cost airport.

"From present indications, it seems logical to assume that runways or landing strips having lengths of 4,000 feet should be adequate for shuttle type aircraft, and if the methods of landing strip construction mentioned in this article are used they can possibly be constructed at an estimated cost between \$45,000 to \$60,000 per runway, including drainage structures, depending, of course, upon the sites selected. Compare the above estimates with the cost of the average paved runway, which amounts anywhere from \$200,000 to \$500,000, and we have something which deserves a great deal of consideration."

CAB Calendar

Mar. 17—Oral argument on application of American for stop at San Antonio between Ft. Worth-Dallas and Mexico City.

Mar. 17—Hearing on application of Hughes Tool Co. for Board approval of its control of TWA if such approval is required. (Docket 1182).

Mar. 27—Oral argument New York-Boston cases. (Docket 13401-B 1 et al.).

Apr. 1—Hearing on application of TWA for stops at Joplin, Tulsa, and Oklahoma City between St. Louis and Amarillo on Route 2. (Docket 413) (Tentative).

Apr. 1—Hearing on applications of Mid-Continent, Delta, National and Kansas City Southern involving service between Kansas City and New Orleans. (Docket 570 et al.) (Tentative).

Apr. 3—Hearing on applications of Mid-Continent, Kansas City Southern, Delta and National for service between Kansas City and New Orleans. (Docket 661 et al.).

Apr. 12—Hearing on applications of TWA and American for stops at Joplin, Tulsa and Oklahoma City.

Apr. 17—Hearing on applications involving service between Washington, D. C. and Ottawa and Montreal, Canada. (Tentative). (Docket 609).

May 1—Prehearing conference on applications of Hawaiian, TWA, Matson Navigation Co. & Northwest for routes from Los Angeles, San Diego, San Francisco, Portland, Seattle to Honolulu. (Docket 851 et al.).

May 15—Hearing on Latin America-Caribbean applications. (Docket 525 et al.). (Tentative).

Airline Personnel



Palmer



Brownlee



Gulick



Strehlike

American Airlines announces the appointment of Paul Gibson Larie to the newly created position of comptroller. Stanley G. King has been named vice president and managing director of American Airlines de Mexico. Tull Rea has been elected vice president in charge of operations.

Pan American Airways reports that L. C. Reynolds has been named manager of a new division formed to consolidate into a single administrative unit all of PAA's transpacific and Alaska services. George L. Strehlike has been named assistant sales manager of the Latin American Division with headquarters in Miami.

United Air Lines announces that W. H. Maxwell, with its Pacific operations since 1942, will return to his former position as station manager at LaGuardia Field, New York City. Charles A. Sluder, who filled in for Maxwell at New York, will return as station manager at Omaha. O. W. Brownlee, acting station manager at Omaha, is being assigned as station manager at Toledo, and Cyril L. Palmer has been transferred from Toledo to Youngstown as station manager there. He succeeds Rolf Batzer, who has been assigned to Toledo. Election of Curtis Barkes as comptroller of United and Carroll H. Blanchard as auditor has been announced following a meeting of the board of directors. The two new offices were created, according to W. A. Patterson, president, in view of the company's growth and the increasing complexity of its activities. William A. Pullin, former high school teacher at Maplewood, N. J.,

has been appointed assistant director of United's school and college service for the eastern area.

Dr. L. G. Lederer, director of the medical department of Pennsylvania-Central Airlines, has been named to the national faculty of the Wartime Graduate Medical Meetings, sponsored by the American Medical Association, the American College of Physicians, and the American College of Surgeons to provide a wartime substitute for the usual post-graduate courses attended by doctors in time of peace.

Leslie G. Brown has been named assistant to the vice president in charge of operations of Braniff Airways.

Northwest Airlines announces appointment of Walter A. Vane as chief meteorologist for the NWA Eastern region, & N. Gulick, station manager at Fargo, N. D., has been transferred to the Twin Cities, and has been succeeded at Fargo by W. L. Hollingsworth, station manager and superintendent of stations for the NWA Northern region at Edmonton, Alberta, since 1942.

Edward J. Ryan, formerly assistant Eastern Division public relations manager for Pan American World Airways at Miami, Fla., has arrived in Los Angeles to be public relations representative for the Southern California area.

Joseph C. Collins has been appointed Eastern regional manager of the Agency and Interline Dept. of Transcontinental and Western Air with headquarters in New York.



Vane



Reynolds



Collins



Brown

War Patterns In Silver



NO LONGER is the use of silver as a raw material confined largely to the coinage mints and manufacturing jewelers. Silver has its War patterns, too—and you will find them hard at work, principally in airplane engine bearings. "Precious metal" is an understatement in describing silver's value in aviation engine performance.

Two short years ago, silver was a negligible factor in aviation manufacture. But when War stresses and demands created problems that other metals could not solve, silver stepped into the breach.

Through techniques such as the Mallosil Process developed by Mallory, new methods of bonding silver with base metals have increased reliable engine performance tremendously. The Mallosil* Process permits large scale production of precision Mallory

Bearings to give longer wear and to meet the brutal stresses and strains that fighter and bomber engines must undergo on every flight.

Today, approaching 25% of the World's silver output goes into the engine bearings that insure the warplane's incredible records. Almost every high output warplane engine relies on silver bearings for all engine, reduction gear and supercharger bearings.

Mallory has pioneered the new silverizing methods so well that makers of warplane and other heavy duty bearings now depend on Mallory as a reliable source for precision production. Mallory facilities, expanded over and over again to meet military aviation needs, are recognized as the most advanced in the new techniques which

have raised aircraft engine performance to so much higher levels.

Commercial aviation will benefit from this War development. But the scope of silverized bearings does not stop with aviation. In plant and factory, on the road—wherever precision bearings are essential for improved engine performance, Mallory Bearings have much to offer to the plans of design engineers.

War production occupies our stage today. But we are looking to the future and will be glad to discuss bearing problems and applications for peacetime designs. Get in touch with us.

P. R. MALLORY & CO., Inc.
INDIANAPOLIS 6
INDIANA

MALLORY
SERVES THE AERONAUTICAL, AUTOMOTIVE, ELECTRICAL, GEOPHYSICAL, RADIO AND INDUSTRIAL FIELDS WITH . . . RESISTANCE WELDING ELECTRODES
NON-PERFUS ALLOYS, POWDER METALLURGY AND BI-METALS . . . ELECTRICAL CONTACTS,
. . . THE MALLOSIL® PROCESS—BEARINGS . . . SPECIALIZED PRECISION ELECTRONIC PRODUCTS
Reg. U. S. Pat. Off.





"Defrosting" the LIBERATOR

Here you see a part of the monstrous landing gear of a Liberator bomber.

This ship was originally built, with miraculous speed, on a hum-ming assembly line—its design "frozen" for fast production. Now we are "unfreezing" many of its features; adding improvements evolved from battle experience; installing new weapons, new armor, new controls; equipping the ship for action in some special theater of war.

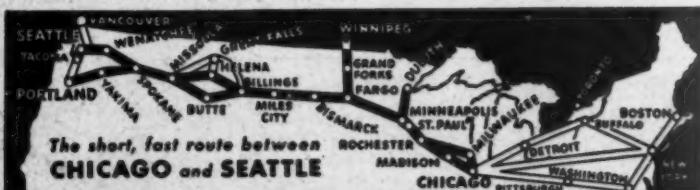
The skilled young woman shown above is adding one small but vital accessory—a dust excluder boot of

our own design, which protects the polished sliding shaft of the landing gear from dust and sand.

This work is being done at Northwest Airlines' Bomber Modification Center at Holman Airport, St. Paul. It's an immensely big plant we have created here, and it's a thrilling job we are doing.

We are proud that we were selected to do the job...and happy that every new idea used in this work will help to perfect America's peacetime aviation, as well as speed our aerial vengeance upon our enemies.

NORTHWEST AIRLINES



TWA Awarded Stop At Morgantown; Warner Dissents

A strong dissenting opinion by Edward P. Warner, vice chairman of the Civil Aeronautics Board, has given a relative unimportant route proceeding a degree of significance which is not ordinarily attached to Board decisions which add but one stop to an existing carrier's route.

The Board, by a three to one vote, approved the application of TWA for a stop at Morgantown, W. Va. on its Route 1 between terminal points—Dayton, Ohio and Washington, D. C.

Warner dissented on the grounds that the Board should not add points piecemeal to transcontinental routes while it has pending a study involving the Local Feeder-Pickup applications. His dissent follows, in part:

"I disagree with the conclusion of the majority that Morgantown should at the present time be made an additional stop on a transcontinental route. We now have before us the whole question of how local air transport service is best to be rendered. Until further consideration has been given to that subject, and until we have received comments on and had an opportunity to consider the examiner's report in our current investigation of local, feeder, and pick-up air services—its issues should not be disposed of piecemeal by permanent and irrevocable action to add to through routes more cities which are not of very large population, unless some very special reason for taking such action appears in particular cases. It does not appear that any adequate occasion for emergency treatment has been shown in the present instance."

"A basic element in all such cases is the determination of whether it is local or through transportation that is particularly needed. To attempt to meet the requirements of such a point as Morgantown by adding it to a transcontinental route, if it appears that the major need is actually for transportation to nearby points, will result either in making the through carrier into a purveyor of local service as well, with certain schedules arranged for that purpose, or (as has been the customary consequence in the past) in penalizing the community by limiting it to schedules planned especially to serve through travelers, sometimes running through the small intermediate points only at the most inconvenient hours of the day or night, and often operated on a skip-stop basis so that no transportation between neighboring communities on the same line is in fact provided."

Chairman L. Welch Pogue, Oswald Ryan and Josh Lee signed the majority opinion which followed closely the recommendations of CAB Examiner Barron Fredricks. Harilee Branch, the remaining member did not take part in the decision.

3 New TWA Schedules

Three additional daily schedules through Reading, Pa., will be inaugurated by Transcontinental & Western Air on March 15. The new schedules represent some of those which formerly were routed through Philadelphia prior to the Civil Aeronautics Board's order of last Dec. 23 closing the Philadelphia airport to commercial air traffic.

From the SNOW CAPS...



to the CACTUS

That will be your range when you fly your own plane after Victory is won—a week-end of skiing or hunting in the North—bathing or a round of golf in the sunny South. Business and pleasure trips will be made in a fraction of the time now required. Planes will be safe and easy to fly—engines will be economical and dependable—and age will be no barrier to anyone desiring to own and fly a personal plane.

We still face a big job before all this is possible, but if each of us does his utmost for the War effort, Victory will come—and freedom to come and go will be ours once more.

Yes, after the War you will have a plane—an efficient, safe plane—that will take you and your family wherever you want to go. For utmost reliability, with economy, decide today that your plane of tomorrow will be powered by a dependable, easy-to-service Jacobs Engine—like those now training more bomber pilots than all other engines combined.



JACOBS AIRCRAFT Engines

POTTSTOWN, PENNSYLVANIA, U. S. A.



TRANSPORT



YOUR AIR EXPRESS shipments ought to be handled like hot potatoes, not "parked" on the floor awaiting a "routine" afternoon pick-up. Pack early, phone immediately, and avoid end-of-the-day congestion when Airline traffic is at its peak. That's the way to get fastest delivery by AIR EXPRESS. You're paying for speed...GET ALL YOU CAN! It's easy, SHIP WHEN READY!

And to cut costs — AIR EXPRESS shipments should be packed compactly but securely, to obtain the best ratio of size to weight.



A Money-Saving,
High-Speed Tool For
Every Business

As a result of increased efficiency developed to meet wartime demands, rates have recently been reduced. Shippers nationwide are now saving an average of more than 10% on Air Express charges. And Air Express schedules are based on "hours", not days and weeks—with 3-mile-a-minute service direct to hundreds of U.S. cities and scores of foreign countries.

WRITE TODAY for "Vision Unlimited"—an informative booklet that will stimulate the thinking of every executive. Dept. PR-3, Railway Express Agency, 230 Park Avenue, New York 17, N. Y.

AIR EXPRESS
AIR EXPRESS
Gets there FIRST

Phone RAILWAY EXPRESS AGENCY, AIR EXPRESS DIVISION
Representing the AIRLINES of the United States

AA Egg-Shipping Experiment



American Airlines is cooperating with the University of Maryland in exploring the possibility of utilizing air transportation in the rehabilitation of poultry stocks in occupied countries. It is essential for maximum production to place hatching eggs in incubators within a 10-day period after they have been laid. Air transportation presents the only method of trans-oceanic shipment which will insure delivery within the given time period. William Christopher, AA agent in Washington, D. C., is shown collecting data from a control unit which accompanied a recent experimental shipment of 15 dozen eggs from Washington to Los Angeles. At scheduled stops in Nashville, Memphis, Dallas, El Paso, Tucson, Phoenix and Los Angeles, American officials made observations requested by the university.

National's Air Mail Pay Set At 9.5c

In its 12th decision fixing the air mail pay of air transport carriers, the Civil Aeronautics Board, has given a relatively 17 months, departed from the 0.3 mills per pound mile formula in determining the mail pay of National Airlines, Inc.

The Board set the rate for the company's Jacksonville to Miami and Jacksonville to New Orleans routes for the period Jan. 1, 1943 to Oct. 31, 1943 at 11.41 cents per airplane mile and set a rate of 9.50 cents per airplane mile for the period after Nov. 1, 1943 for any month where the daily average mileage does not exceed 6,822 miles. The new rate is on a 300 poundage basis.

These mail rate determinations will reduce the carrier's air mail revenue for the review period by \$156,000 and its annual air mail revenue after Nov. 1, 1943 by approximately \$145,000.

YOU CAN HELP!



RED CROSS WAR FUND



FREE ENLARGEMENTS (14" wide) of this cartoon by Edmund Duffy, three-times winner of the Pulitzer Prize, are now available. Write, on your business letterhead, to: Bruce Livie, President, Liberty Motors & Engineering Corp., Baltimore-1, Md.



LIBERTY TEST UNIT (Type 103) saves much time in testing all instruments carried by aircraft. Top of unit provides handy work bench when open — serves as tool storage box when shut.

Test ALL Aircraft Instruments with this ONE Portable Unit *Quickly.. Completely.. Accurately.*

THIS Liberty Test Unit (Type 103) is complete, compact and portable. Rolls up to the ship and thoroughly tests and calibrates all types of aircraft instruments, including their accessories and installation, in a few hours. Saves days over other methods. Self-contained and may be completely closed and locked. Because of its versatility and high efficiency, this unit is extensively used by the U. S. Navy, the British, Canadian and Russian Governments, as well as by airlines and aircraft builders. Write for complete information.

**LIBERTY MOTORS
& ENGINEERING CORPORATION
BALTIMORE-1, MARYLAND**

Copyright 1944,
Liberty Motors & Eng. Corp.

MANUFACTURERS OF AIRCRAFT SERVICE TOOLS AND TEST EQUIPMENT

Realistic Approach Best in Future Air Planning—Dickins

C. H. "Punch" Dickins, vice president and general manager of Canadian Pacific Air Lines, doesn't look for a post-war aviation industry in which the skies are immediately "blackened with thousands of helicopters, roadable aircraft and huge transports."

Instead he holds for a realistic approach in future planning which will permit a gradual growth along lines which insure a reasonable amount of economic success and stability for the industry.

His cautioning remarks on over-optimism were made to American Aviation during a recent interview in Los Angeles. Dickins is on the West Coast to visit aircraft plants, accompanied by G. W. G. McConachie, general manager of CPA at Edmonton, and D. B. Wallace, assistant to vice president and general manager.

Dickins said that Canadian Pacific, which now operates a world-wide surface transport system, wants to supplement its routes with air transport after the war.

"We are hopeful that following the governmental discussions on international aviation between Canada, Britain and the United States in Washington on March 28 an international policy will be forthcoming."

Using the realistic yardstick, he expects his company to expand 50 per cent after the war. "We are interested in securing economically sound airplanes which have been definitely proven," Dickins continued.

"Right now, we are faced with problems of standardizing our equipment. The company has 80 planes, 40 of twin-engine type which includes 10 Lockheed Lodestars. A number of single-engine ships are equipped with skis and floats to service off-line points. We have succeeded in reducing engine types from 41 to 15."

When equipment is again available, Dickins looks for standardization on four plane types. The first two are craft



Pictured during recent visit to West Coast aircraft plants are these Canadian Pacific Air Lines executives: left to right, G. W. G. McConachie, general manager of CPAL's Western lines at Edmonton; C. H. "Punch" Dickins, vice president and general manager; and D. B. Wallace, assistant to Dickins.

Four Canadian Airmen Win U. S. Awards



Four civilian airmen of Canadian Pacific Air Lines were awarded the United States Air Medal recently for their flying feats in rescuing 27 AAF personnel in the wilds of Central Quebec a year ago. The awards were made by U. S. Ambassador to Canada Ray Atherton with prominent RAF and AAF personnel in attendance. Left to right—Peter Midlige, Norman Crewe, Capt. Ray Roy, and Capt. Norman Forrester, the airmen, with Mr. Atherton; Col. Orlady, AAF; Lt. J. Baxter, AAF; Air Vice-Marshal R. L. G. Marix, head of the RAF Transport Command; Air Commodore G. W. Powell, of the RAFTC, and L. B. Unwin, president of Canadian Pacific Air Lines.

suited for operations in Northern Canada; the third for use in inter-urban operations would be similar to specifications set forth by Air Transport Association, and the fourth would come in the category for trans-oceanic service.

He described planes needed for Northern operations as follows: A single-engine utility type, approximately 7500 pounds, adaptable to floats or skis, capable of carrying eight passengers and baggage or one cargo ton 500 miles. The second would be a twin-engine plane, 15,000 pound gross, adaptable for 12 passengers or 4000 pounds of cargo.

Speed for the single engine was placed at 135 miles per hour and for the twin-engine at 150 to 165 miles per hour.

During 1943 Dickins reported a passenger traffic increase of 80 per cent and mail increase of 100 per cent on the 12,000 miles of north-south lines operated by CPA. Much of the traffic was in connection with northern defense projects, such as the Alaska highway and the Canol pipeline project just 100 miles south of the Arctic circle.

CANADIAN PACIFIC AIR LINES carried 5,806 passengers during January, an increase of 83% over the corresponding month of last year. Cargo carried totaled 620,500 pounds, an increase of 2%, and mail, 185,793 pounds, a decrease of 14%. Passenger miles flown reached 2,005,225, an increase of 145% over last year, and mail pound miles totaled 69,224,680, an increase of 4%.

CONTINENTAL AIR LINES flew 14,873,461 revenue passenger miles in 1943, a 33% increase over the 10,323,112 miles flown in 1942. CAL showed gains in all of its commercial activities, with the exception of revenue miles flown. The latter decreased 9% in 1943 compared with the previous year, primarily because of less aircraft.

ATA Studies Rate Bases; Material Available to Airlines in CAB Hearing

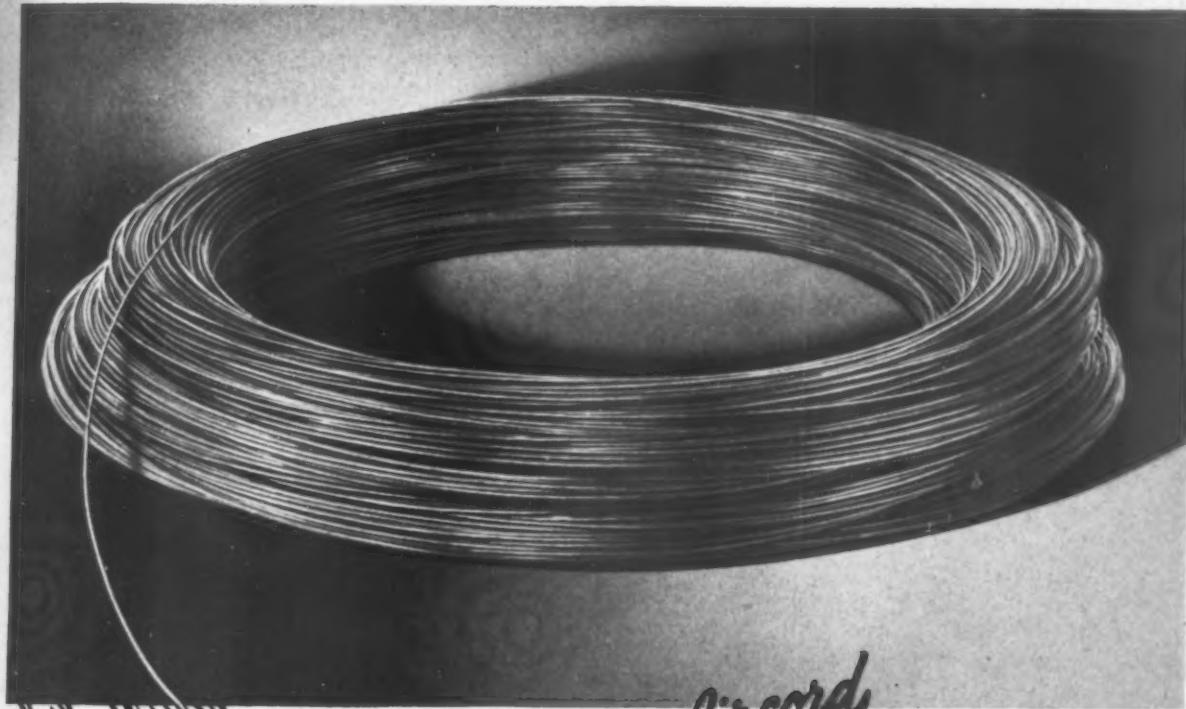
The Air Transport Association is engaged in making a study of rate bases and related matters in connection with rate-making theory. The material will be made available to the airlines in connection with Civil Aeronautics Board hearings.

Reginald V. Hobbah, for the past months a specialist in the Transportation Section of the Office of Civilian Requirements of the War Production Board, has been engaged to make this study under the direction of Dr. L. C. Sorrell, head of the Economic Research and Planning Division of ATA.

The study was decided upon after the Finance and Accounting Conference. ATA had considered the broader aspects of the problem, and appointed a committee to give more detailed study to the subject. One of the important questions considered by the committee is whether the present rate base—invested capital—is a proper base for use by CAB in establishing rates for mail pay, passenger fares and cargo. Treasurers of most of the airline companies feel that the present basis is inequitable to the air carriers and illogical for use in connection with an industry requiring relatively small investment.

Hobbah has had teaching assignments in transportation at the Universities of Pittsburgh, Maine and Iowa. In addition Hobbah has had considerable practical experience in traffic and transportation work for railroads and oil companies.

Control cable can be no better than the individual wires that go into its construction . . . our open hearths, blooming mills, rod and wire mills are all dedicated to the production of specialized wire and wire alone



To the know-how and facilities of a wire-specialist add the intimate knowledge of aviation industry requirements Roebling has gained in more than thirty years of close co-operation with aircraft builders . . . the result? . . . an ideal source of supply for your company's needs in Control Cord and Strand, Terminals, Complete Swaged Assemblies, Control Casing, Special Wires and Cables, and Slings.

Aircord Division

JOHN A. ROEBLING'S SONS COMPANY, Trenton 2, New Jersey
Branches and Warehouses in Principal Cities

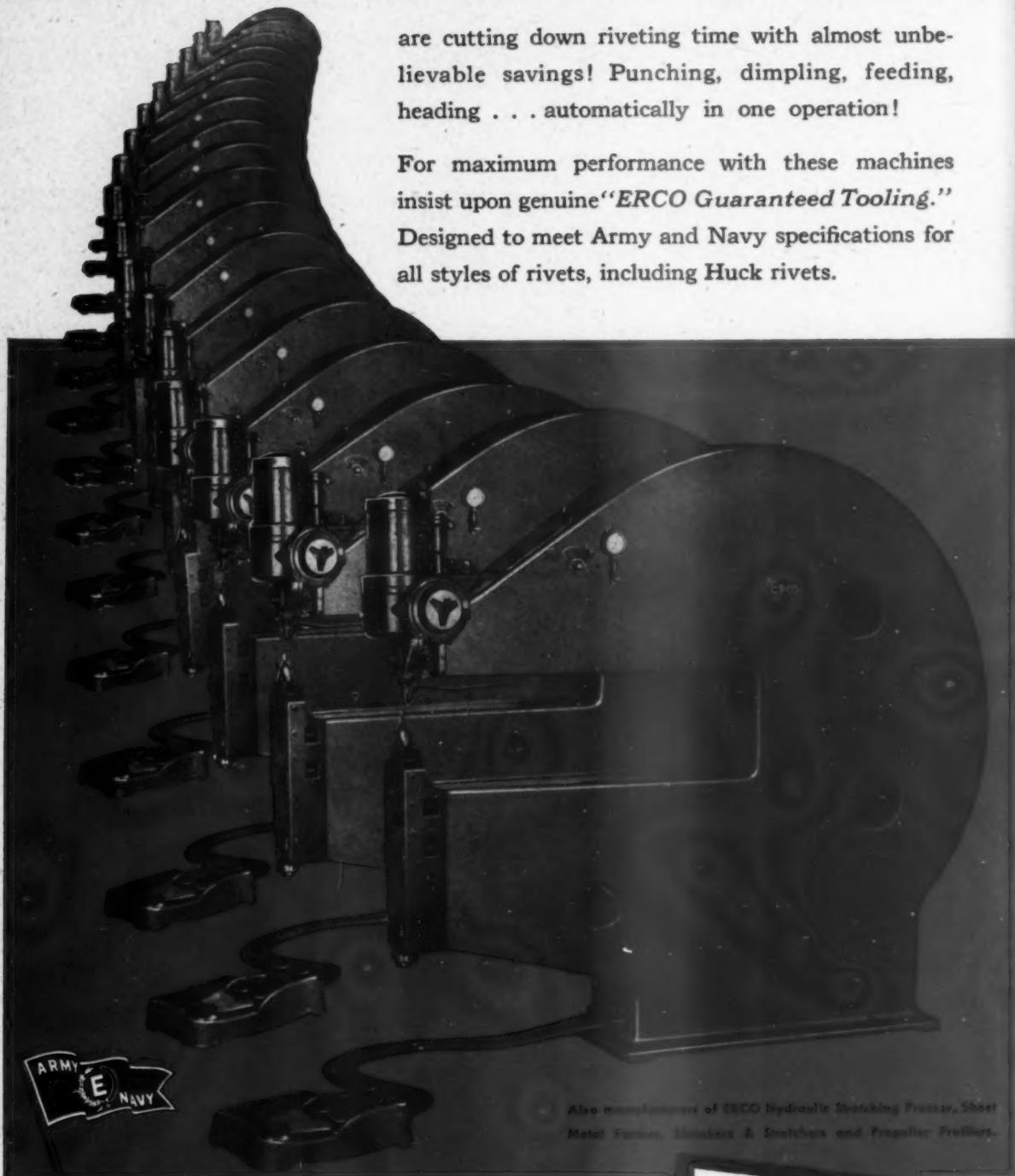


ROEBLING

Means Control In The Air

WIRE ROPE AND STRAND • FITTINGS • AERIAL WIRE ROPE SYSTEMS • COLD ROLLED STRIP • HIGH AND LOW CARBON ACID AND BASIC OPEN HEARTH STEELS • ROUND AND SHAPED WIRE • ELECTRICAL WIRES AND CABLES • WIRE CLOTH AND NETTING
AIRCORD, SWAGED TERMINALS AND ASSEMBLIES • SUSPENSION BRIDGES AND CABLES

More and MORE ERCO'S



are cutting down riveting time with almost unbelievable savings! Punching, dimpling, feeding, heading . . . automatically in one operation!

For maximum performance with these machines insist upon genuine "ERCO Guaranteed Tooling."

Designed to meet Army and Navy specifications for all styles of rivets, including Huck rivets.

Also manufacturers of ERCO Hydraulic Stretching Presses, Sheet Metal Formers, Shears & Stretchers and Propeller Profilers.

**ENGINEERING & RESEARCH
CORPORATION**

Main office and plant
RIVERDALE, MD.

West Coast office
LOS ANGELES, CAL.

ERCO

'F

THE
op-
Bal-
qua-

of an
to one
the ru-
If we
in the
practi-
us is

Var-
way
be fo-
hour.
condi-
among
between
tion f-
for a
that t-
with
the e-

A

This
way
ring
sured
wind
port,
the m-

How
muni-
will h-
critic-
loading
other
now.
way I
termin-
only n-
one—
gates.

Rat-
future
let us
airpo-
befitt-
last a-
much
can d-
limit.
To
prepla-

A m

'Balance Needed in Postwar Airport Design'

Visualize Elements of Airport in Their Proper Relationship to One Another, Foley Urges

By E. J. FOLEY

THE KEY to airport design for airline operation is the single word—balance. Balance implies more than matching quantities of runway, loading ramp and terminal. It demands that the design permit expansion of all these elements hand-in-hand as the volume of business requires. Expandable balance is the precise requisite.

Past failures in airport design are directly traceable to a failure to visualize the elements of an airport in their proper relationship to one another. We must remember that the runway is the least of our problems. If we look at the most "crowded" airport in the country, the first thing that strikes practical purposes.

us is that the runway is empty, for all various experts are predicting that runway capacity in the near future should be forty to sixty landings or takeoffs an hour. This of course assumes contact conditions but some of the more optimistic among us say there will be no difference between instrument and contact operation five years after the war. Digressing for a moment, we join in silent prayer with some pilots of our acquaintance—that the optimists are readying some of the easy stages by which we shall step from today to this tomorrow.

Adequate Runways! So What?

This apparent overadequacy of the runway doesn't absolve the designer of planning runways. Runway sufficiency is assured by simply covering the several wind directions, but balance of the airport, as a whole, can be defeated by even the most adequate runway layout.

How? In probably 90% of the communities in the United States, one runway will handle more traffic than exists in the critical peak hour today. Conversely loading gates and terminal buildings, our other two elements, are bottlenecks right now. In far too many cases, the runway layout has been made to fit today's terminal and is such a good fit that the only road to balance is the most expensive one—total relocation of the terminal and gates.

Rather than get stuck like this, in the future we should develop a yardstick to let us measure the future business on our airport. Buildings of the size and style befitting an airport should be expected to last and if built with an idea of how much business they must handle, they can do the job right up to the runway limit.

To those who question the possibility of preplanning such balance, we remind

them of the elevator bank in their office building. The size of the building determines the elevator capacity needed to "carry" it. In an airport we have a true parallel. The runways are the elevators; the "elevators" will handle a certain fixed volume of business. Our terminal in its final form must handle that same volume in the interests of efficiency.

Airline estimates give a measure of what should be expected. We noted earlier that 40-60 movements per hour per runway were expected. A second safe assumption is 30 minutes per aircraft at the loading gate. Figuring a balance in movements, i.e. half landings and half takeoffs, the number of loading positions comes out to be one-quarter of the number of movements per hour. For a single runway layout, this is 10-15; increasing in direct proportion for parallel, dual parallel, etc.

'Allow for Expansion'

Look carefully at the 10-15 loading positions figure and remember that this is the ultimate for a single runway layout. Few airports will attain this level, but all can. The airport planning must be built on the best estimate of the maximum volume of traffic—passengers, cargo, etc.—expected for the life of the airport. The initial plan must allow for expansion of loading positions to whatever number is indicated by a traffic study.

The terminal building or buildings must offer this same feature of expandability. "Buildings" is used advisedly since some of the best thinking indicates that unit-type terminal construction to handle one or two loading positions each offer the best possibilities for functional design and logical simple expansion.

Speaking of terminals, there is more than expansion necessary. We have indicated in the past the need for a meeting of the minds on the function which airport buildings must serve. The architects and engineers whose concern it is to design and construct these terminals must have a sound understanding of what is expected of the building in operation. The design standards appropriate for other municipal buildings must not be assumed applicable to an airport.

The elements of aviation participating in the airport as tenants have a duty and responsibility to make available the products of their best thinking on the subject of terminal facilities. The development of traffic estimates, the establishment of flow patterns for passengers and cargo through the terminal and the computation of dimensional parameters (e.g. number of feet of ticket counter per 100 passengers per hour, number of square feet required for handling 5000 pounds of cargo per hour, etc.)—these are examples of joint problems requiring cooperative solution by municipal and aviation interests.

Having touched briefly on the three physical elements of the airport-runway

pattern, loading gates and terminal facilities, the matter of loading gates stands out as the most productive of problems. This is because of its direct impact on the passenger to whom the airlines direct their every effort. The passenger is oblivious of the runway pattern. Accommodating him in the terminal may not be too much of a problem. But getting him from runway to terminal or vice versa can be a flagrant disservice.

The crux of the matter is location. Proximity to terminal, proximity to the airplane and proximity to the runway end are the goal for a loading gate. If we talk in terms of one or two, the difficulty is slight. Design for expansion to ten or more necessitates compromise, usually in the direction of a tiresome walk for the passenger. A solution of this problem which promises minimum demand upon the passenger plus expandability to meet the demands of a growing business has not yet been proposed to our knowledge. Its importance demands immediate and intelligent attention.

Reverting to an earlier paragraph, we spoke of 40-60 movements per hour per runway and 30 minutes per airplane at the loading position as determining the ultimate in gate requirements. Lest anyone think that this represents the whole airport problem or that from this determination our developments are automatically satisfactory, we wish to sketch briefly the need for recognizing the airline operating problems early in our thinking.

'Combine Operating Problems'

It may be sound to combine these operating problems and the human element involved in the several phases of airport functioning—calling the result the Airport Design Load Factor. It should represent our appreciation of the difference between theoretical airport capacity as computed from our determinants and the actual operating capacity, practical of attainment.

Visualize the airport completed and you see the operation of airline gates promiscuously carried out with consolidated terminal company personnel or else you see specific gate assignments to companies.

In the case of the former, experience indicates that consolidated operation is frequently best described as promiscuous. Although it permits the use of any gate by any carrier, it is a difficult procedure to control and at best it can offer only a marginal service to the traveling public. The personal touch is lacking and the high possible utility of the gates so attainable is attainable only by sacrifice.

The assignment of gates to individual air carriers provides the best possibility for service to the passenger. However,

(Turn to page 88)



A new 36 page Installation and Inspection Manual is now ready for distribution to the thousands of users of Cherry Blind Rivets throughout the aircraft industry.

Cherry Rivets are extremely easy to install and have wide tolerances in grip length and hole size provided the correct rivet is used and tools are handled properly.

Profusely illustrated with cut-away drawings and dia-

grams, this new Manual B-44 clearly presents the few simple rules to follow when using Cherry Rivets. The book includes sections on Description, Installation, Tools and Inspection.

The section dealing with inspection procedure eliminates any guess work on the part of the inspector whether the "blind" side of the work is visible or not. Request your copy of the Manual B-44 now.

CHERRY RIVET COMPANY,
231 Winston Street,
Los Angeles 13, California.

Please send my free copy of the new Manual B-44.

Individual's Name _____

Title _____

Company _____

Street _____

City _____

CHERRY RIVETS, THEIR
MANUFACTURE AND
APPLICATION ARE
COVERED BY U. S.
PATENTS ISSUED AND
PENDING.

Cherry Rivet
Company
LOS ANGELES, CALIFORNIA

she
tax
sto
nev
air
lan
rub
like
spr
of
lan
ene
lan
use
thro
The
pri
air

W
the
cov
rou
the

United
ceive t
clutch
on two
threaded
surfaces
ceptible
est diam
prone t
shafts r
opportu
scratches
protection
new pla
the heat
and guar
finished

Ame

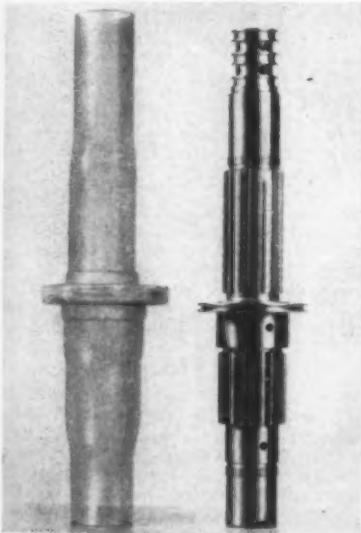
Equipment News

Air-Spring Strut

The harnessing of air to absorb the shocks of airplane landings, take-offs and taxiing runs is announced by the Firestone Tire & Rubber Co., originator of a new-type landing mechanism called an air-spring strut. The air in the new landing mechanism is confined in a flexible rubberized container which operates much like an accordian bellows. With the air spring, all the shock-absorbing properties of a pneumatic tire are repeated in the landing strut. To absorb the tremendous energy of an airplane's first impact in landing, oil heretofore has been generally used. The oil is confined and forced through a small hole at high pressure. The Firestone air-spring uses an identical principle, except that a large volume of air at low pressure is used instead of oil.

Plastic Protective Shield

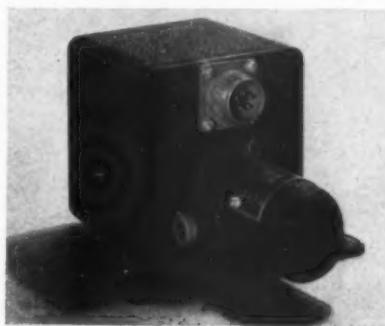
What is probably the first application in the aircraft industry of protective plastic covers for parts in process is now in routine use at the East Hartford plant of the Pratt & Whitney Aircraft Division of



United Aircraft Corp. First part to receive the benefit of such a protector is a clutch drive shaft. Machined with splines on two of its dozen diameters, with two threaded sections and four micro-finished surfaces, this shaft was extremely susceptible to damage in process. Its largest diameter, nearly in the center, was prone to act as a wheel and consequently shafts rolled against each other at every opportunity, resulting in nicks and scratches. A study of various methods of protection led to the development of the new plastic container which is fitted after the heat-treat and finish-grind operations and guards the part as it progresses toward finished inspection.

Position Light Flasher

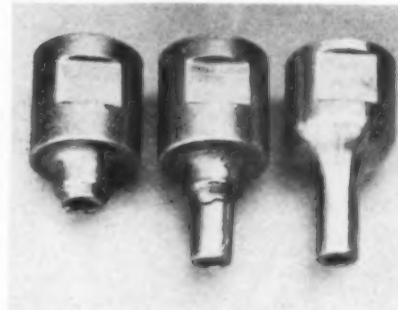
A new position light flasher (12-volt Model 3990 and 24-volt Model 3990A), developed by Pacific Division, Bendix Aviation Corporation, (formerly Bendix Aviation, Ltd.), and approved by Civil Aeronautics Authority and the Army, is now



in use on U. S. Airlines and on Army trainer planes. Exclusively designed for aircraft, the flasher is small, weighs only 2.1 pounds, can be operated at either 12 or 24 volts and has withstood a 65 degree centigrade test, which is 25 degrees below the CAA standard. The flasher was built to conform with CAA safety regulations which require commercial aircraft to replace the one white tail light with white and red lights flashing alternately. Each cycle—there must be 40 per minute—consists of 150 degrees of white light, 10 degrees of no light, 150 degrees of red light and 50 degrees of no light.

Router Shaft and Chuck

Fifteen thousand rpm. is really whirling around, and the conventional router chucks turning at this speed in Northrop Aircraft's router room gave up the ghost on the average after about sixteen hours service. The trouble was vibration. A couple of thousandths off center at this speed makes an ordinarily well behaved router chuck act like a whirling dervish. The photos show how and where the chucks broke, and how they were attached to the router shaft in the conventional just-plain-old-screwing-them-on method. The photos also illustrate a



new and improved router shaft and chuck, designed by Northrop machinist, W. K. Pendleton, and applicable to all types of routers. Instead of sixteen hours service, the new type chucks give out with four hundred hours or better.

Protect Irreplaceable
Equipment
by NEW FUSING



Electrical installations for:

X-RAY INSPECTION TESTING
PLANT COMMUNICATIONS
FIRE AND BURGLAR ALARMS
VOLTMETERS AMMETERS

Thousands of other Units

**Fuse Every Instrument
For Safety with**

Littelfuses

This is a war of electrical instruments—for metering, testing, inspection, protection—absolutely necessary to production. Many of these are irreplaceable.

**Present equipment
must be kept on
the job!**

Efficient fusing prevents damage by short circuits—burnouts—saves valuable instruments—protects them against inexperienced operators.



Instrument
Littelfuses

Many plants and laboratories are installing new fuses throughout. Littelfuse will be glad to help you with practicable suggestions. Feel free to call on us.

LITTELFUSE Inc.

263 Ong St. El Monte, California
4793 Ravenswood Ave., Chicago 40, Ill.

Dismissal Pay for Aircraft War Workers Being Studied

By BARBARA B. C. MCNAMEE

THE POSSIBILITY that aircraft war workers will be given dismissal pay came another step closer to reality with the announcement that War Manpower Chairman McNutt has directed his staff to draw up memoranda on the plan.

In announcing his approval of dismissal pay and high priorities on postwar jobs for workers in war industries, McNutt said the plan would require careful study, "but it seems to me worth doing." The proposal, made at a recent meeting of WMC's Labor-Management Policy Committee, was suggested by Clinton S. Golden, Vice Chairman of WPB and WMC as an incentive to workers to stick to war jobs.

Aircraft manufacturers, as well as many labor officials, have urged the Government to adopt some such policy since many war-expanded manufacturers will have insufficient funds on termination to guarantee equitable settlements with dismissed employees. Many industry spokesmen indicated disappointment that neither the Baruch or George reports recommended this type of action.

The plan as outlined by Golden would provide "steady" war workers with dismissal pay related to their length of service and would guarantee them prior-

ities on postwar jobs second only to veterans. WMC Deputy Chairman Lawrence A. Appley explained that the proposal was too new for complete procedures to be worked out but anticipated that it would be administered through U.S.E.S. and could be applied to workers who were discharged by their employers either because of cutbacks or complete termination of government contracts.

"I believe that in justice to these workers and in the interest of their orderly demobilization after the war, some plan should be evolved which will give them some sense of protection, recognition and reward," Golden explained in submitting his proposal.

"Such a plan should be applied, I think to industries of a war and emergency nature whose temporary character is clear. I think we should be able to say to workers in such plants:

"If you people remain in this industry until it is indicated that your services are no longer needed, you will then receive a dismissal wage based upon your length of service and total earnings. It will be payable in whole or in part only at the time it is indicated that your services are no longer needed. You who have met these conditions will be placed in a priority position for postwar job placement second only to that of veterans. In

Coast Production Up

February production of West Coast aircraft factories hit a new high of 32,469,000 pounds, exclusive of thousands of small parts, according to Brig. Gen. D. F. Stace, Western Procurement District Supervisor, AAF Materiel Command.

This was an increase of 577,000 pounds over January, the previous high. In numbers, February production was 2,569 planes, an increase of 10 over January.

Better utilization of manpower, increased efficiency of workers, decreased labor turnover and better labor-management cooperation were listed by Gen. Stace as contributing factors.

other words, the last people to leave these industries which are of a temporary nature, but whose production is of such great importance, will be the first ones to receive consideration for placement in other jobs upon the termination of their services by their employers.

If the placement plan were found to be practicable and was adopted, it would place a very heavy responsibility upon the War Manpower Commission. It would require a good deal of planning, a good deal of organization, a good deal of effort.

"But I think," Golden concluded, "that if this whole thing could be thought through, it could be evolved into a plan that would have a profound effect upon the attitudes of people in these war industries, their fears of sudden dismissal, or their temptation to follow the old rule of every man for himself, without regard to the war program."

Some questions which the WMC staff will have to investigate in the study ordered by McNutt will be concerned with enabling legislation, the part played by the procurement agencies, funds for paying workers and methods for certifying such things as length of workers' service and cause for dismissal.

Mark III Develops 6,600 hp

The Handley Page Halifax Mark III four-engined bomber now has four Bristol Hercules sleeve-valve radial engines, developing an aggregate 6,600 horsepower, company reports from London. Other constructional features are the same as in earlier types, but the larger engines increase the weight. Besides an improved rate of climb, a shorter takeoff and greater speed, MARK III is said to be able to fly in higher altitudes, due to the bigger wingspan, 104 feet instead of 99, and to the stronger engines. Improvements in rudders and stabilizing fins have increased its power of maneuver and improved its defensive ability.

Martin Mariner's Safety Cited

"Not a single man lost in nearly a million miles of overocean flying" is the record of the PBM-3 Mariner, the Glenn L. Martin Co. reports. This record was not established by regular transport airplanes, but by converted patrol bombers which had seen considerable service on the U-boat front before being assigned to Naval Air Transport duty, the company adds.



The Engineering Committee of the Aircraft War Production Council is shown at its February meeting. Left to right, seated, starting with man in immediate foreground, John W. Cramer, standards engineer, Boeing Aircraft Co.; W. N. Wallace, staff engineer, Lockheed Aircraft Corp.; B. C. Boulton, staff assistant, Douglas Aircraft Co.; N. S. Houston, assistant chief engineer, North American Aviation; C. L. Bates, chief stress engineer, Northrop Aircraft; R. A. Dutton, engineering manager, Northrop Aircraft; M. E. Oliveau, executive assistant, Douglas Aircraft Co.; A. E. Raymond, vice president, engineering, Douglas Aircraft Co.; B. T. Salmon, chief engineer, Ryan Aeronautical Co.; standing, James L. Straight, Roger J. Dieudonne, Aircraft War Production Council staff members.



**...and it will be just as easy for you to handle
your bigger cargo planes... if you have the
right equipment**

All right—let's talk about weight. This is the era of pounds and tons, not grams and ounces. Loads are block-busters, heavy cargo, troops. The impossible is happening—the airplane has grown up.



Aviation Jack—Capacity 17 tons

No longer a toy or a hobby, the industry's new stature needs corresponding growth in all the collateral services associated with it. Handling maintenance—cargo loading—all in terms of tons.

Whiting Corporation, with over 60 years of equipment handling experience, is in a position to render a broad range of Collateral Engineering Service to the aircraft designer and operator on such problems as they arise.



WHITING CORPORATION

Main Office and Plant: 15647 Lathrop Ave., Harvey, Ill.
Western Office: 1151 S. Broadway, Los Angeles 15, Calif.
Canadian Subsidiary: Whiting Corporation (Canada) Ltd., Toronto, Ontario.

Branch Offices in New York, Chicago, Buffalo, Birmingham, Pittsburgh, Detroit, Cincinnati, St. Louis, and Washington, D. C.

A V I A T I O N D I V I S I O N

AAC Quartz CRYSTALS

help keep the communications



Today...and Tomorrow

Illustrated at right is a typical crystal manufactured by Aircraft Accessories Corporation and used in both ground and plane radio installations by America's commercial airlines. Many other types of AAC crystal units are being supplied various branches of the armed service and other government agencies.

Today, practically all AAC facilities are devoted to war production. Tomorrow, advanced AAC electronic developments will be available for the post-war world.



AIRCRAFT

Manufacturers of PRECISION
Burbank, Calif. Kansas

systems of the World's Greatest Airline Working Efficiently!



REALIZING the extreme importance placed by the airlines upon the proper maintenance of their communications facilities, Aircraft Accessories Corporation has set aside a special division of its crystal laboratories to provide rapid delivery to airlines and associated communications services of a variety of standard crystals. Deliveries in limited quantities can be made within a few days after receipt of purchase order with adequate priority.

In the manufacture of quartz crystals, AAC development and production engineers employ the experience gained as one of America's largest producers of transmitters and other precision radio equipment. AAC crystal units will meet the most exacting requirements under severe operating conditions. Address all crystal orders and inquiries to Electronics Division, Kansas City, Kansas.

The services of our Engineering Department in designing special equipment are available to you without obligation.

Products of

ELECTRONICS DIVISION

TRANSMITTERS • AIRCRAFT AND TANK ANTENNAS

QUARTZ CRYSTALS • RADIO

TEST EQUIPMENT



◀ Type AA9 Crystal, 2.5 parts/million temperature coefficient, accuracy of carrier frequency .01%. Made in three models—A, G and E, covering total fundamental frequency range of 200 to 10,000 kc. Internal adjustment screw permits small amount of frequency control in the single crystal units, AA9A and AA9G.

PROMPT DELIVERY

AIRCRAFT ACCESSORIES CORPORATION
AIRCRAFT EQUIPMENT • HYDRAULICS • ELECTRONICS
City, Kans. New York, N.Y. Cable Address: AACPRO

Southern California Manpower Crisis Reported 'Over Hump'

By PEGGY GUETTER

A REPORT ON Southern California war industries, and aircraft in particular following six months as a restricted labor area, operating under stringent manpower and production controls, reveals general progress coupled with maladjustments for many of the small plants.

The manpower crisis is definitely "over the hump." All plants have had six months in which to carefully study actual requirements, arriving at a fairly accurate estimate on manpower. All sides are willing to agree that last summer's estimated shortage of 400,000 to 500,000 was an exaggerated "guesstimate" brought about by the rush of events and production demands.

Now underscoring this improved situation is the basic fact that after two years an area which turned overnight from an agriculture and tourist center to industrial production, second only to Detroit, has achieved the "know-how" of mass production.

This applies equally to the major aircraft factories and to the more than 7,000 other war plants, both large and small.

Better utilization of labor, the current downward trend in turnover—long the major bugaboo in estimating requirements—and standardization in models point to a continuing stability for the aircraft industry.

As one executive expresses it, "From now on out, there may be minor crises, but it looks as though the day of major headaches in aircraft war production is over."

However, the blessings of stabilization and increased efficiency are mixed. Many smaller firms are finding it difficult to obtain new contracts. Their "available capacity" is growing as work formerly open for bids in this area is going to similar plants in non-restricted communities.

The Chamber of Commerce, Merchant and Manufacturers Association, Aircraft Parts Manufacturers Association and Smaller War Plants Corporation are actively trying to rectify this situation.

The most hopeful urge removal from a number one area. In face of the coming Pacific offensive, this seems highly improbable.

More likely compromise is the one sought in Washington by Robert S. Breyer, regional director of SWPC, in charge of Southern California and Arizona, who recently told small business-

"We're asking the government to permit the smaller war plants here to bid on new work. Then if bids are low, let them do the work subject to the production urgency committee of the WPA. That committee can determine if the plants have manpower enough to do the work. That group can decide whether or

Ryan Financial Report

Ryan Aeronautical Company and subsidiaries in the annual report to stockholders for the fiscal year ended October 31, 1943 showed net profits after all charges of \$597,313 compared with \$536,444 in the previous year. This was equivalent to \$1.36 a share against \$1.27.

Total revenue for the year was \$25,357,542 an increase of 29% over the \$19,620,076 reported in 1942. Working Capital was \$1,633,969, or \$3.72 a share compared with \$1,277,783, or \$2.91. Net worth rose from \$2,453,231, or \$5.58, to \$2,852,907, or \$6.49.

Consolidated Balance Sheet, October 31, 1943, shows assets of \$13,872,544. Current assets were \$11,528,474 including cash \$1,919,641; cash, restricted collateral account under Reg. V-Loan, \$745,001; accounts receivable \$1,597,518; due from U. S. Gov't., \$1,621,899; inventories \$5,644,414; Investments \$26,376. Postwar refund of Excess Profits Tax \$250,252. Emergency Plant Facilities \$694,695; fixed assets \$1,164,655; deferred charges \$206,707.

Current liabilities were \$9,894,505, including notes payable—banks—Reg. V-Loan secured by war production contracts, \$2,900,000; accounts payable \$1,999,740; salaries and wages payable \$356,190; refund due on renegotiation \$1,785,216; dividend payable \$153,717; provision for taxes \$2,401,346; accruals \$298,293. Note payable, secured by Emergency Plant Facilities contract \$631,412. Reserves \$493,719. Capital stock \$439,193; paid-in surplus \$513,438; earned surplus \$1,900,275.

not aircraft plants have enough employees."

One spokesman for the military, in discussing the problem with American Aviation, pointed out that current production lags for some companies were brought about by changing war strategies and a completely tooled aircraft industry which no longer created demands on tooling and machine shops.

He elaborated further, "We can't overlook our national responsibility, despite an improving manpower situation here. The great unknown of the Pacific offensive will center in this area, making Los Angeles unlike any other critical labor area.

"Every single combat plane made on the West Coast, with one exception, will be used in the Pacific. If the European war ends without great attrition, it may be possible to cut aircraft schedules. But we must be prepared to produce even more, should Europe exact a great toll."

"Add to this the great tunneling of materials through here to the Pacific. Still another major factor is the urgency of the ship building industry here which includes landing barges and amphibious tanks. Then, too, who is to say how much battle repair will be done on the West Coast?"

It was also emphasized that eight billion dollars in contracts had come into the area since the manpower directive, an increase over last year.

On the same subject, Louis M. Dreves, chairman of the Area Production Urgency Committee, reported that during January contracts totaling \$165,429,846 to 31 prime contractors were approved. None were disallowed during the month.

In Dreves' personal opinion, "We remain a critical labor area until the war is over because as leading war producers, we've got to be ready for the Pacific."



For ease of assembly—for maximum protection against short circuits due to abrasion of wire insulation—use Amphenol AN-3062 90° Conduit Coupling. This coupling has a smooth inner bore—true 90° radius—no tool marks—no sharp angles or rough surfaces to scar insulation. Maximum roominess at angle simplifies wiring, makes it easy to pull cable during assembly.

AMERICAN PHENOLIC CORPORATION, CHICAGO 50, ILLINOIS

IN CANADA—AMPHENOL LIMITED, TORONTO

For a complete listing of all Amphenol A-N Fittings, write for Data Sheets.



Production up

from 700 parts per hour

to 1000 with

GULF CUT-AID



This revolutionary new cutting oil
consistently shows better results
in machining nonferrous metals —
it will pay you to investigate!

With soluble oil as the cutting fluid, this machine drilled and tapped 700 parts per hour. With Gulf Cut-Aid — no other changes — production is approximately 1,000 per hour . . . a gain of 43%!

This is typical of results with Gulf Cut-Aid on nonferrous metals. In scores of plants, this revolutionary new cutting oil has directly contributed to greater production, longer tool life, and better finishes.

Let a Gulf Service Engineer show you why Gulf Cut-Aid is the ideal cutting fluid for many of your nonferrous metal machining jobs. Write, wire, or phone your nearest Gulf office today.

Gulf Oil Corporation • Gulf Refining Company

Gulf Building, Pittsburgh 30, Pa.



rt
d sub-
stock-
October
charges
in the
ent to

25,357,-
620,076
al was
d with
e from
\$6.49.
ber 31,
current
cash
al ac-
1; ac-
om U.
44,414
and of
ergency
assets
7.

94,505,
eg. V-
tracta,
0; sal-
refund
dividend
tax
ayable,
ilities
93,719.
urplus

em-
y, in
erica
pro-
were
tegies
industry
tool-

over-
ite an
The
ensive
Los
labor

on the
ill be
in war
ay be
But
even
toll.
ng of
acific.
geney
which
obious
how
n the

illion
area
crease

reves,
gency
uary
prime
we're

remain
over
we've

44

MANUFACTURING

EXCEL-SO TransFUELsion*

DELIVERS WATER-FREE
GASOLINE TO PILOTS**



** IN THE AIR



** AT SEA



** ON LAND



Delivers Gasoline 99.999% Water-Free

Such high efficiency of water removal—unapproached by any other type unit—is due to the *Excel-So scientifically designed* coalescing and filter media (patent applied for) and specially engineered settling chamber.

For use on all existing fueling systems, *Excel-So* Water Separators are built in sizes from 25 to 1000 gpm at pressure drops not to exceed 5 lbs., with other capacities and higher operating pressures; also designed and built to handle Diesel fuels and kerosene.

Write today covering your water removal problems. Also for Bulletin No. 2007.

**TransFUELsion*: fuel transfusion of enriched gasoline, due to water and "muck" removal, by the *Excel-So* refueling method that guarantees clean, dry gasoline containing not more than 1/500 of 1% water, free or emulsified;

**TransFUELsion*: Government testing engineers, after tests involving millions of gallons of leaded and unleaded high grade aviation fuels, found that *Excel-So* Water Separators delivered gasoline 99.999% water-free.

WARNER LEWIS COMPANY

Box 3096, Tulsa-8, Oklahoma, Tel. 4-3176
710 14th Street, N.W., Washington-5, D.C.
Telephone: District 5505

Many Operational, Personnel Changes Made at Lockheed

As a result of the recent corporate consolidation of Lockheed and Vega a number of operational and personnel changes have been made for reasons of economy and efficiency of operation. Among those which have taken place within the past two weeks are the following:

THE MATERIEL OFFICES at Factories A (formerly Vega) and B (formerly Lockheed) were reorganized into the Office of Director of Purchases, headed by Roger Lewis and the Office of Materiel Control, headed by E. A. Brown. Both offices report to H. E. Ryker, Vice President in Charge of Materiel Control, and to B. W. deGuichard, formerly Director of Materiel, Factory A, now assistant to Ryker.

Appointment of Walter G. Hoskinson as Director of Inspection for both factories, assisted by Ralph M. Willis and Dale E. Hixson, chief inspectors respectively for Factories A and B is announced.

PURCHASING, OUTSIDE PRODUCTION, AND SUBCONTRACTING activities of both factories have been placed under direction of Roger Lewis, Director of Purchases. Assisting him will be J. L. Wells, General Purchasing Agent; J. E. Blaine, Manager of Outside Production; and C. A. Frick, Manager of Subcontracting. Temporarily, it will be necessary to continue to operate separate departments in each factory.

Other staff changes include promotion of L. K. Schwartz, assistant to the president and director of public relations who was named Sales Manager to head the sales office newly established under the direction of Carl B. Squier, Vice President in charge of Sales and Service. L. M. Bach was appointed General Works Manager, in charge of the manufacturing operations at Factories A and B. In the manu-



Carl Squier, left, Lockheed's vice president in charge of sales and service, is shown with Leonard K. Schwartz, sales manager, assistant to president, and director of public relations.

Los Angeles Surveys Postwar Labor Plans

A forerunner of the employment problem facing the Los Angeles area during the postwar period is shown in a survey released by the Chamber of Commerce which polled more than 65,000 war workers on their postwar intentions.

The report shows that 89% of the male war workers and 81% of female war workers desire to remain in Los Angeles County when peace returns, while 94% of former Los Angeles industrial workers now on military leave of absence are planning to return.

Eighty per cent of male war workers and 79% of female war workers who have come into the area since war began signified intentions of remaining. Sixty-two per cent of all women now working in war plants expect to continue work of some kind after the war, with 42 per cent saying they desired to continue factory work.

Of the male workers, only 15% did factory work before the war, while only 3% of the female workers had previous factory experience. Industrial ex-employees now in armed forces polled 72% planning to return to former employers and 47% reported new skills acquired in military service.

A special sub-committee of the Chamber's research committee is carrying out a postwar economic planning survey. R. S. Donaldson, industrial relations department of Lockheed Aircraft Corp., is a member of the group which plans the program on a progressive basis so that any change in worker attitudes can be measured and recorded.

More than 70% of all persons receiving the questionnaires sent in replies.

A similar survey is now being conducted in San Diego war plants by that city's Chamber of Commerce.

factoring department, D. J. Haughton is assistant general works manager.

G. H. Prudden and F. Penn Holter have been appointed works managers of Factories A and B respectively. E. Stackhouse is Director of Manufacturing Development to consolidate the manufacturing, engineering and tooling divisions of both factories. W. G. Dollmeyer is assistant works manager at Factory A and new assistant directors of manufacturing development are B. W. Loyd and M. E. Maurer.

France Named C-W Buffalo Chief

Charles W. France, vice president of Curtiss-Wright Corp. and general manager of its aircraft plant at St. Louis for the last eight years, has been appointed general manager of the organization's war-plane plants at Buffalo.

Murray Personnel Growing

Working personnel at the Murray Corporation of America bomber parts plant at Scranton, Pa., will be doubled by April, it is stated. At present the bomber wing factory employment is in the neighborhood of 1,400. An average of fifteen new trainees are being added to the force daily and the percentage of hirings is to be stepped up greatly in the near future. Eventually, the plant personnel will exceed 7,000.



MERCY OR MAYHEM

Not so many hours ago, this G.I. stopped one with his name on it. In his grandfather's day—or even his father's—the odds would have been against him. Now, though, thanks to the wonders which modern medicine and modern transport are working at the front, it's almost a sure thing that he'll make the last leg of that long journey home on his own two legs.

For this fighting man and many others, the trip back to Main Street begins in the

giant gliders designed and built for the Army Air Forces right here at WACO. On these missions of mercy, WACO gliders have repeatedly demonstrated their effectiveness... just as they have on many a mission of mayhem far behind the enemy's lines. THE WACO AIRCRAFT COMPANY, Troy, Ohio, U. S. A.



Eleven other manufacturers also are building WACO gliders for the AAF, using WACO design and engineering supervision. Their many uses include the transport of air-borne infantry in battle . . . the transport of vital personnel and supplies to and from the front lines.

ALL ARMY CARGO-TRANSPORT GLIDERS ARE WACO DESIGNED

MANUFACTURING



Courageous Men Are Doing Brave Deeds in the Upper Air

The name "IRVIN" on the harness means the chute is produced in an Irvin Factory with over 23 years' experience and skill in chute making.

Literature can be had by school or training executives for the asking. Address Main Office, Buffalo, N. Y.

THE CATERPILLAR CLUB

Founded in 1920. There is only one qualification for a life membership: In an emergency men and women who have saved their lives with Irvin Air Chutes. The word CATERPILLAR and representation of a caterpillar are registered trade-mark features of Irvin Air Chute Co., Inc. We are anxious that the records of the Club be kept as complete as possible in the Club Register and members, upon enrollment, will receive a caterpillar token with the name inscribed thereon. Communicate with our Main Office.

IRVING AIR CHUTE CO., INC.

1670 Jefferson Ave. Buffalo 8, N. Y.

Other factories in United States, Canada and England

IRVIN
Air Chutes

SERVING THE UNITED NATIONS' AIR FORCES

Aviation Securities Over the Counter (Courtesy Merrill Lynch, Pierce, Fenner, and Beane)

Aviation Securities Over the Counter			(Courtesy Merrill Lynch, Pierce, Fenner, and Beane)	
	February 26	March 4		
	Bid	Asked	Bid	Asked
AIRLINES				
All American Aviation	3%	4%	3%	4%
American Airlines Pfd.	110%	112	112	114
American Export Airlines	28%	30	30%	31%
Braniff	14%	15%	15%	15%
Chicago & So. Com.	12%	13%	12%	12%
Chicago & So. Wts.	5	5%	5%	5%
Continental Airlines	10%	11	10%	11
Delta Air	24	25	23%	25
Inland Airlines	3%	3%	3%	3%
Mid Continent	5%	6	6%	6%
National	16%	18	17%	18%
Northeast Airlines	8%	9%	8%	9%
Penn. Cent. Airlines Pfd.	30%	31%	31	32
MANUFACTURERS				
Aeronca	3%	3%	3%	3%
Air Associates Com.	8%	9	8%	9
Aircraft & Diesel	1	1%	1	1%
Aircraft Accessories	2%	2%	2%	2%
Airplane & Marine	1%	2%	1%	2%
Airplane Mfg. & Supply	65c	75c	65c	75c
Central Airports	5%	7%	5%	7%
Columbia Aircraft Pfd.	3%	3%	3%	3%
Conti. Aviation	23%	31	23%	31
Delaware Aircraft Pfd.	1%	1	1%	1
Gen. Aviation Equip.	1%	1%	1%	1%
Globe Aircraft	1%	1%	1%	1%
Harlaw Aircraft	15c	30c	15c	30c
Harvill Aircraft—Now				
Harvill Corp. Com.	21%	23%	2	2%
Harvill Corp. Pfd.	75c	90c	75c	90c
Interstate Aircraft & Eng.	6	6%	6%	7%
Jacobs Aircraft	31%	3%	31%	3%
Kellett Aircraft	2	2%	1%	2%
Kinner Motor	70c	85c	70c	85c
Liberty Aircraft	111%	111%	111%	111%
Luscombe	1%	1%	1%	1%
Menasco Mfg.	90c	1.10	90c	1.10
Northrop Aircraft	51%	51%	51%	51%
Piper Aircraft Com.	43%	51%	5	5%
Piper Aircraft Pfd.	13	14	14%	15%
Pitts. Aviation Ind.	51%	.....	51%	.....
Rohr Aircraft	57%	61%	51%	51%
Std. Aircraft Prod.	31%	4	31%	4
Taylorcraft Com.	13%	14%	13%	14%
Taylorcraft Pfd.	43%	51%	43%	51%
Timm	35c	45c	35c	45c
Utd. Aircraft Prod. Pfd.	141%	151%	141%	151%

Manufacturing Personnel

Lloyd D. Brace, vice president of the First National Bank of Boston, has been elected a director of Republic Aviation Corp.

Sperry Gyroscope Co. announces that E. E. Da Parma, manager of the Brooklyn plant, has been named manager of the company's Nassau plant at Great Neck, L. I.

John M. Schaeffer of New York City has been elected to the board of directors of McDonnell Aircraft Corp.

Ira Stuart Wilson, New York financial and accounting executive, has been elected vice president in charge of finance of Aircraft Accessories Corp.

Wickwire Spencer Steel Co. announces that H. C. Allington has been appointed sales research engineer, in charge of the development and expansion of markets.

H. M. McKay, formerly vice president in charge of production at St. Louis Aircraft Corp., has been named assistant general manager of the Fairchild Aircraft's Burlington, N. C., plant.

Adel Precision Products Corp. announces the appointment of John W. Kelly as chief engineer, heading the research and engineering department.

Robert K. Ogden has been elected controller of Northrop Aircraft. He has been active in corporation and public accounting for the past 20 years.

**The LIGHT PLANE, too,
has an AMPHIBIOUS future**



Here's a Taylorcraft on experimental Amphibious Floats that work well on both land and water.

A non-retractable bow skid, proportioned to create hydro-dynamic lift when in contact with the water, takes the place of the retractable bow wheel used on larger models. The only retractable parts are the main wheels, cable operated by a direct acting hand lever . . . fast acting, and like the bow skid, simple in arrangement, saving in weight, cost and maintenance.

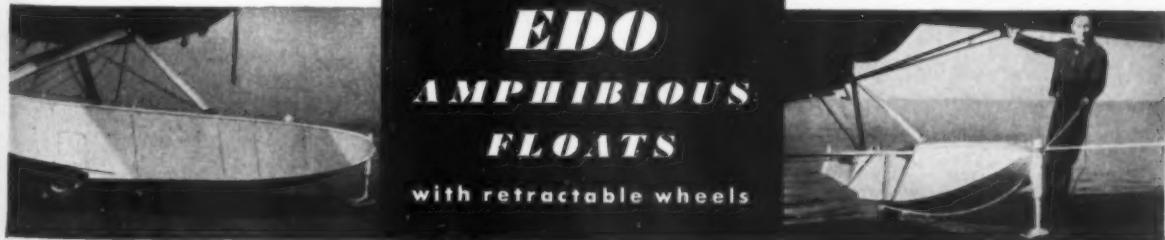
This light plane Amphibious Float development was undertaken as a commercial program

just prior to the war. Ultimate production was necessarily postponed for the duration, but the float gear was thoroughly tested under A.A.F. orders. The gear then served the important function as a prototype for the highly successful L-1A and C-47 Amphibious Floats which followed it.

EDO AIRCRAFT CORPORATION, 407 SECOND STREET, COLLEGE POINT, L. I., N. Y.



EDO
AMPHIBIOUS
FLOATS
with retractable wheels



* **EDO FLOAT GEARS** *

SERVE THE UNITED NATIONS



EXTRA HORSEPOWER

...IN A PACKAGE!

Not all of a plane's horsepower is in the engine. An emergency supply is needed to power the brakes, lower landing gear, operate bomb-bay doors . . . and to do other jobs in a hurry. Carbon dioxide, stored in handy containers under high pressure, provides this auxiliary power. A Kidde cylinder only 30 inches long holds over a million foot-pounds of energy! Kidde valves make this tremendous power available in a quick burst, or over any desired period.

The aviation industry has found many uses for gases-under-pressure, harnessed by Walter Kidde & Company. If you have a power-actuation job, our experience will be useful to you in working out equipment to handle it. Drop a line to our Research and Development Department.



WALTER KIDDE & COMPANY, INC., 313 MAIN STREET, BELLEVILLE, N. J.

Manufacturing Personnel



French

Cross

Hilliard

Carroll E. French has been appointed director of the newly created industrial relations department of Boeing Aircraft Co. He was formerly with Industrial Relations Counselors, New York City.

Bendix Aviation Corp. reports the appointment of W. P. Hilliard as general manager of the Radio Division at Baltimore and Red Bank, N. J., and the appointment of Robert G. Hoof as liaison engineer in the Contract Administration Department of the Pacific Division.

Scott Aviation Corp. announces the appointment of Howard A. Benzel as vice president in charge of engineering and a director of the corporation; Philip E. Meidenbauer as Director of Oxygen Research; H. F. Whittaker as Director of Chemical Research; and L. M. Crans as personnel director.



Benzel

Whittaker

Crans

Fairchild Engine and Airplane Corp. reports the following news: Roswell H. Rausch, president of the Automatic Paper Machinery Co., Hoboken, N. J., has been elected a director; J. Ford Johnson, a director has been named to the executive committee; William D. Cross, Jr., has been appointed Contracts Manager of the Duramold Division; Harold W. Reilly has been promoted to assistant treasurer of the Ranger Aircraft Engines Division.

P. R. Bassett, vice president for engineering of Sperry Gyroscope Co., has been appointed acting general manager; Camille F. Poirier has been named industrial sales manager.

Perfect Circle announces that Lloyd Ashby has been named personnel manager of the Richmond, Ind., plant.



Hoof

Reilly

Meidenbauer



Recognition for . . .

SUSTAINED PRODUCTION

Washington, D. C.
February 2, 1944.

Mr. JOHN KENNEDY, President
Globe Aircraft Corporation
Fort Worth, Texas.

The Aircraft Production Board is pleased to note that you met your January schedule, and congratulates you for maintaining the fine record of production which you established in 1943.

C. E. WILSON, Chairman
Aircraft Production Board

GLOBE
GLIDE

Manufacturers of the AT-10 Advanced Trainer and The Swift GC-1

AIRCRAFT CORPORATION

FORT WORTH, TEXAS, U. S. A.



MANUFACTURING

1944 WAR FUND

This message sponsored by

Hotel Lexington

LEXINGTON AVE. at 48th ST., N. Y. C., 17

B-H

MANUFACTURERS
of SHEET METAL and
TUBULAR ACCESSORIES

SHEET METAL
FABRICATION

CONTRACTORS TO ALL LEADING
ENGINE and PROPELLER
MANUFACTURERS

B-H

B-H AIRCRAFT CO.
LONG ISLAND CITY NEW YORK

Organization of Parts

Makers Enlarged to 200

A progress report released by T. T. Arden, recently re-elected to serve a second term as president of the Aircraft Parts Manufacturers Association, shows that the organization has grown from eight member companies in July, 1940, to 200 plants in the Southern California area.

During 1943, the president reports that compilation and publication last June of a Job Dictionary for the Aircraft Parts Manufacturing Industry was "an outstanding accomplishment." He points out the dictionary has furnished a standard in numerous cases submitted to WLB and that an amplified and amended edition will be published.

The Personnel Managers' group within the organization was started last year. Chairmanned by A. N. Coleman, Harvey Machine Co. director of industrial relations, the group hold monthly meetings.

Other committees formed to handle mutual problems of the companies include editors of company house organs; Selective Service; Contract Termination; Post-war Planning, and Legislation.

The executive committee which directs and coordinates all activities is headed by Fred W. Wilkins, vice president and general manager, United Aircraft Products, Inc.; W. C. Buchterkirchen, vice president, Gay Engineering Corp.; G. W. Stratton, board chairman, Raymond De-Icer Co.; Morrie B. Pendleton, president, Plumb Tool Co., and T. T. Arden, president of Grayson Heat Control, Ltd.



Paul D. Hileman, left, manager of Thompson Products' West Coast plant, is shown with Frederick C. Crawford, president of Thompson, who recently addressed the Aircraft Parts Manufacturers' Association in Los Angeles.

5 National Security Awards

Lambert St. Louis Municipal Airport, St. Louis; Consolidated-Vultee Aircraft Corp., San Diego, Calif.; Bechtel-McCone-Parsons, Birmingham, Ala.; and Fairchild Aircraft Plants No. 1 and 2, Hagerstown, Md., have been cited by the Office of Civilian Defense for National Security Awards "for superior achievement in plant security organization."

Aviation Corp. Reports \$3,519,437 Net

The Aviation Corporation reported consolidated net earnings for fiscal year ended November 30, 1943, amounted to \$3,519,437, after all charges, taxes and reserves, but still subject to contract renegotiation. Revised net earnings of 1942, after settlement of contract renegotiation with the District Price Adjustment Board, subject to approval at Washington, were \$3,993,575.

Reported earnings in 1943 are equivalent 61¢ per share of capital stock compared with 89¢ in previous year. Decline in net is attributed to an increase of 114% in taxes, of an increase of 33% in provision for postwar readjustment reserve, and absence in 1943 of a large item of profit on sale of securities such as that of \$1,318,154 realized in 1942.

Deliveries of aircraft engines, propellers, precision parts and other war materials totalled \$72,621,507, an increase of 60% over 1942 volume. Total backlog of unfilled orders at end of 1943 amounted to \$79,000,000 for the Corporation's manufacturing units, including the Lycoming, Republic Aircraft Products, Northern Aircraft Products and Spencer Heater Divisions, and American Propeller Corporation.

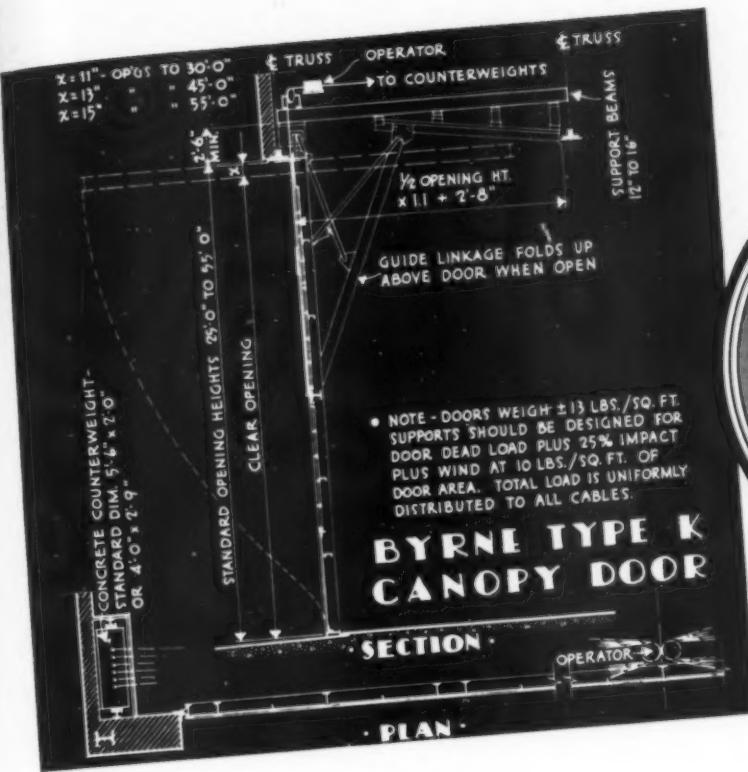
"The Aviation Corporation will emerge from the war with a comprehensive line of aircraft engines to meet both military and civilian needs," Victor Emanuel, president, notes in the annual report to stockholders. "Development work is continuing on liquid cooled types of engines in the higher horsepower categories. Propeller blades and assemblies also are under constant development.

"Our planning for postwar, within the limits necessarily imposed by concentra-

tion on war production, looks toward great advances in aviation and the need for preserving a strong aircraft industry for maintaining America's military air power and supplying civilian requirements. It is our intention not only to resume our role in postwar civil aviation, but to expand our activities as conditions warrant."

Consolidated Balance Sheet, Nov. 30, 1943, shows assets of \$42,030,717. Current assets were \$25,516,378 including cash \$7,994,352; accounts receivable \$5,381,684; accrued interest and dividends receivable \$43,853; inventories \$12,096,489. Non-current notes and accounts receivable partly secured (less reserve of \$4,378) \$270,075. Investments at or below cost (Value based on market quotations \$20,007,780) \$11,774,408. Accounts receivable from U. S. Gov't 1943-48 for emergency plant facilities \$1,167,862. Postwar refund of Excess Profits Tax \$807,244. Fixed assets (less reserves of \$1,571,958 for depreciation and amortization) \$2,115,904. Goodwill, less \$809,445 amortization, \$294,343; deferred charges \$84,503.

Current liabilities were \$14,429, 818 including note payable \$7,750,000; accounts payable \$2,755,227; dividends payable Dec. 20, 1943, \$579,351; renegotiation refund payable to Government for year ended Nov. 30, 1942, \$687,563; accrued liabilities \$2,657,677. Installment note (2½%) payable to bank 1943 to 1946, secured by account receivable from U. S. for emergency plant facilities, \$884,150. Reserve for postwar readjustment \$1,400,000. Capital stock \$17,380,539; capital surplus \$6,147,473; earned surplus since Dec. 31, 1932, \$1,788,737.



When public construction gets the "GO-AHEAD" will your hangar plans be ready?

"V"-day will bring pressure from many quarters for the release of post-war projects employing large numbers of men. Will you be ready with your plans for that new hangar? Because an important part of such plans will be the door . . . the heart of the hangar . . . you should start with the door. Byrne engineers will gladly cooperate with you in designing the most practical door.

Feel free to draw upon Byrne's 20-year experience. Write today or see our catalog in Sweet's.

BYRNE doors

incor porated

1150 Griswold Street

Detroit 26, Michigan

Branch Offices:

WASHINGTON • SAN FRANCISCO • NEW YORK

BYRNE DOORS FOR OPENINGS OF EVERY TYPE AND SIZE

OPERATORS: Here's a Fair Minded Plan For Your Air Minded Future



Assuring Fair Profits

.... Progressive Merchandising
.... Advanced Designing

Are you, as an operator, prepared for the inevitable expansion in popular aviation after the war? When your WTS Program dies, then what? The purpose of the Scott Chartered Dealer Franchise plan is to help progressive operators establish a definite policy based on high and dependable standards—a practical, profitable, intelligent approach to the coming problems of aircraft equipment sales, maintenance and service.

Details on the Scott Chartered Dealer Franchise will be sent on request, explaining how it protects your profits...assists you in merchandising your products and services...promotes your sales through a dependable, nationally advertised line of aircraft accessories which is continuously being improved and enlarged...Write or wire a Scott distributor today for information.

Since 1932, Scott research, developmental and manufacturing facilities have been devoted to the production of quality accessories for light aircraft. Many of these accessories today are standard equipment—many new-type accessories are in the designing stage for post-war presentation.

Scott
AVIATION CORPORATION
Lancaster, N. Y., U. S. A.
ESTABLISHED 1932

SCOTT AVIATION CORPORATION
212 ERIE STREET • LANCASTER, N. Y.

MANUFACTURING

Consolidated Vultee's Backlog of Unfilled Orders \$3,000,000,000

Consolidated Vultee Aircraft Corporation reports sales of \$797,199,544 for fiscal year ended November 30, 1943. Backlog of unfilled orders was revealed as approximately \$3,000,000,000.

The annual report to stockholders states that net income from sales, including operations of Vultee Aircraft, Inc., for eight months only, amounted to \$19,267,941, after providing \$6,800,000 for postwar readjustments. The net income includes, as a deduction from excess profits tax, a debt retirement fund of \$5,143,000, and a postwar refund of \$2,047,000.

Corporation reduced the cost to the Government of airplanes and parts delivered by \$251,000,000 below the price called for in original contracts, through voluntary refunds and price reductions. They do not include the waiver of amounts

due under escalator provisions of contracts.

"Renegotiation proceedings for the 1943 fiscal year have not been commenced, and no indication has been given as to the amount of refund which the Price Adjustment Board thinks should be made," the report explains. "Provision has been made in the accounts for a refund of \$80,000,000. Including this reserve, the total reduction to the Government in the price paid for airplanes and parts in the 1943 fiscal year, including voluntary cash refunds and price reductions already made, amounted to approximately \$251,000,000."

"If a further refund were required, so as to conform the 1943 renegotiations to the same general basis as the settlement for the 1942 fiscal year, there would be a reduction of net income after taxes of approximately \$7,500,000. It is the opinion of the management that, due to the exceptional production record, the substantial reduction in cost of airplanes to the Government and the cash refunds and price reductions made during the year, no refund should be required in excess of the amount already provided."

Leading Aviation Stocks

New York Stock Exchange

	Week Ended Feb. 26			Week Ended March 4				
	Sales	High	Low	Net Change	Sales	High	Low	Net Change
American Airlines	5,500	63 1/2	60	+4 1/4	4,500	65 3/4	63 1/4	+ 5/8
Aviation Corp.	52,200	41 1/2	34 1/2	+ 1 1/2	24,200	41 1/2	37 1/2	- 5/8
Beech Aircraft	2,400	10 1/2	10	+ 1/2	4,000	10	9 1/2	- 1/2
Bell Aircraft	4,800	13 1/2	13 1/2	+ 3/8	3,100	13 3/4	12 1/2	- 3/4
Bendix Aviation	6,600	35 1/2	34 1/2	+ 1 1/2	7,900	36 1/4	35 1/4	+ 1/8
Boeing Airplane	8,300	15 1/2	15	+ 3/8	5,800	15 1/2	14 1/2	- 1/4
Braniff Airways	8,600	15 1/2	14 1/2	+ 1/2	22,500	16 3/8	15 1/2	+ 7/8
Consolidated Vultee	26,300	15 1/2	13 1/2	+ 1 1/2	9,200	14 1/2	13 1/2	- 1
Consolidated Vultee pfd.	3,400	22 1/2	21 1/2	+ 7/8	900	21 1/2	21	- 1/8
Curtiss-Wright	12,200	6	5 1/2	-	10,000	5 1/2	5 1/2	+ 1/8
Curtiss-Wright A	5,500	17 1/2	16 1/2	+ 1/4	3,500	17 1/2	16 1/2	- 1/8
Douglas Aircraft	6,200	57 1/2	52 1/2	+ 4 1/2	2,600	56 1/2	54	- 1 1/2
Eastern Air Lines	6,600	38 1/2	37 1/2	+ 1 1/2	2,500	39	37 3/4	- 1 1/2
Ex-Cell-O	2,200	28 1/2	25 1/2	+ 3/4	1,800	26 1/2	25 1/2	+ 1/8
Gruuman Aircraft Eng.	2,500	12 1/2	12	+ 1/2	1,300	12 1/2	11 1/2	- 1/4
Lockheed Aircraft	15,300	18 1/2	17 1/2	+ 1/2	7,900	18	17 1/2	- 1/4
Martin, Glenn L. Co.	7,300	19	18	+ 1/2	6,500	18 1/2	18	- 1/2
National Aviation	1,100	11 1/2	11 1/2	-	2,500	11 1/2	11 1/2	- 1/8
North American Aviation	10,200	9 1/2	8 1/2	- 1/2	4,700	9	8 1/2	-
Northwest Airlines	4,900	20 1/2	19 1/2	+ 5/8	6,600	21 1/2	19 1/2	+ 1 1/8
Pan American Airways	19,800	32 1/2	32	+ 1 1/2	13,300	33 1/4	32	+ 1 1/2
Penn-Central Airlines	4,700	15 1/2	15 1/2	+ 1/2	4,400	15 1/2	15	+ 1/8
Sperry Corp.	6,600	26	25 1/2	- 1/2	4,600	25 1/2	25 1/2	+ 1/4
Thompson Products	700	36 1/2	36	+ 1/2	800	36	35 1/2	- 1/2
Trans and Western Air	6,200	19 1/2	18 1/2	-	2,100	19 1/2	18 1/2	-
United Air Lines	16,700	26 1/2	25 1/2	+ 1 1/2	9,100	26 1/2	25 1/2	- 1/2
United Air Lines pfd.	800	110 1/2	107 1/2	+ 2 1/2	300	110 1/2	109 1/2	- 1/2
United Aircraft	9,300	30	28 1/2	+ 1/2	7,500	29 1/2	28 1/2	-
United Aircraft pfd.	500	101 1/2	100 1/2	+ 1/2	700	102 1/2	101 1/2	+ 1/2

New York Curb Exchange

	Week Ended Feb. 26			Week Ended March 4				
	Sales	High	Low	Net Change	Sales	High	Low	Net Change
Aero Supply A	100	21	21	-	100	20 3/4	20 3/4	- 1/4
Aero Supply B	1,500	4	3 3/4	+ 1/4	800	4	3 3/4	- 1/4
Air Associates	300	8 1/2	8 1/2	-	1,200	8 1/2	8 1/2	+ 10
Aircraft Accessories	2,000	2 1/2	2 1/2	+ 1/4	3,200	2 1/2	2 1/2	- 1/2
Aero Equipment	200	8 1/2	8 1/2	+ 1/2	1,400	8 1/2	8 1/2	- 1/2
Bellanca Aircraft	800	3 1/2	3	+ 1/2	1,100	3 1/4	3 1/4	-
Brewster Corp.	10,600	12 1/2	10 1/2	+ 2 1/2	6,300	12 1/2	11 1/2	- 1
Brewster Aero	2,300	3 1/2	3 1/4	- 1/2	2,200	3 1/2	3 1/2	+ 1/4
Cessna Aircraft	2,400	6 1/2	6 1/2	-	3,500	6 3/4	6 1/2	-
Colonial Airlines	6,100	8	7	- 1/2	2,200	7 1/2	7 1/4	- 1/2
Macchi Eng. and Air.	5,500	2 1/2	2 1/2	+ 1/2	4,900	2 1/4	2 1/2	- 1/2
Irving Air Chute	400	8	8	+ 1/2	900	8 1/4	8	+ 1/4
Republic Aviation	5,700	4 1/2	4 1/4	- 1/2	3,900	4 1/4	3 3/4	- 1/2
Ryan Aero	600	3 1/2	3 1/2	+ 1/2	100	3 1/2	3 1/2	-
Solar Aircraft	600	3 1/2	3 1/2	-	400	3 1/2	3	- 1/2
United Aircraft Prod.	2,200	9 1/2	8 1/2	-	1,500	8 3/4	8 1/4	- 1/2
Western Air Lines	4,300	9 1/2	8 1/2	+ 1/2	2,900	9 1/2	8 1/2	+ 1/2

PREformed

for finest
PERFORMANCE

MACWHYTE

Hi-Fatigue

TRADE MARK REG.

**AIRCRAFT
CABLES AND
ASSEMBLIES**

All Macwhyte aircraft products are made to conform to A-N specifications . . . including:

"Safe-Lock" Terminals

. . . in eye end, turnbuckle end, stud end and fork end.

Aircraft Slings

. . . custom-built for your work. Both standard wire rope and braided slings.

Tie-Rods

. . . for internal and external bracing. Streamline, square, round.

"Hi-Fatigue" Cables

in these constructions



MACWHYTE COMPANY

2953 Fourteenth Avenue
Kenosha, Wisconsin

Manufacturers of MACWHYTE
"Hi-Fatigue" Aircraft Cables—"Safe-Lock" Cable Terminals—Aircraft Tie-Rods—Braided Wire Rope Slings—and Wire Rope for all requirements.



NO. 713-A

MANUFACTURING

Contractors to the United States Army, Navy and Coast Guard, and Aircraft Engine Builders . . .



SPARK PLUGS

THE B&G CORPORATION

136 W. 52nd St. New York

THE CHOICE OF THE
AVIATION INDUSTRY

B&G
SPARK
PLUGS

WORLD'S PREMIER AIRPLANE FABRIC

FLIGHTEX

ATLANTIC RAYON CORP.

INDUSTRIAL FABRICS DIVISION

350 Fifth Avenue, New York 1, N. Y.

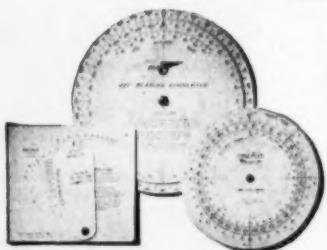
Leading Manufacturers of Fabric and Tapes for the Aircraft industry.



Export Representative—Aviquipo, Inc., 25 Beaver St., N. Y. Cable Add.: Aviquipo

Aircraft

Computers



RADIUS OF ACTION—Determines the time and distance from a fixed base.

TIMED TURN—Indicates time of turn in seconds, angle of turn and the new heading, when making standard approach turns.

D/F BEARING—Converts relative QDM and QDE direction finder bearings.

COX AND STEVENS AIRCRAFT
CORPORATION

P. O. Box 30

Mineola, N.Y.

Abolition of Cost-Plus Contracts Opposed By Donald Nelson

Complete abolition of cost-plus-fixed-fee war contracts would seriously hamper the aircraft and shipbuilding industries. War Production Board Chairman Donald Nelson told the Senate Military Affairs Subcommittee which is holding hearings on the Ferguson joint resolution to outlaw cost-plus-fixed-fee contracts (S. J. 80).

Nelson said he agreed with the resolution "in principle" but thought it should be made more flexible to provide for cases where it is impossible to figure costs. "I don't see how you are going to demand fixed-price contracts for the aircraft industry where thousands of modifications have to be made in design after battle experience proves their need when it is almost impossible to determine actual costs in advance. To outlaw entirely these cost-plus-fixed-fee contracts would seriously hamper this vital industry."

"No one can foresee how many changes may be necessary or what their cost will be. Then the plane is tested in battle. More changes may be required," he explained. "In aircraft we need the best machines possible. It is impossible to figure the costs. To attempt to do so for fixed price contracts would slow down production."

Nelson admitted that excessive prices in war contracts, regardless of the type of contract, "dissipate the normal incentives for cost controls." He proposed, to correct that condition: "participation in cost savings (incentive bonuses) and penalties in reduced earnings similar to the losses which contractors must expect from inefficient operations."

Foley

(Continued from page 69)

run through a typical peak at the airport and see how this "desirable" arrangement qualifies the theoretical ideal.

Our airport has ten loading positions but Southern Airlines, our hypothetical company, has only two gates. Flight 11 originates at our port at 5 P.M.; Flight 3 passes through at 5:35 P.M.; Flight 7 terminates at 6:15; Flight 13 and an extra section are scheduled to depart at 6:15. This is the problem.

Eleven gets to Gate 2 in plenty of time but landing gear trouble requires an equipment change and 11 still sits there at 5:55. Three passes through Gate 4 on schedule. Gate 2 continues blocked and we have three movements to handle at one gate. Assuming that Gate 2 finally opens up at 6:15 everything gets pushed around badly and our theory of one gate for every four movements per runway per hour looks a little worse for the wear. Still the gates at the other end of the ramp may have been vacant throughout this flurry.

Time does not permit the working out of the dozens of combinations necessary to illustrate the practical complications inherent in airport operation. It is only necessary that we think of them and their effect. They represent our Airport Design Load Factor, the divisor which reduces our airport performance to practical operating levels.

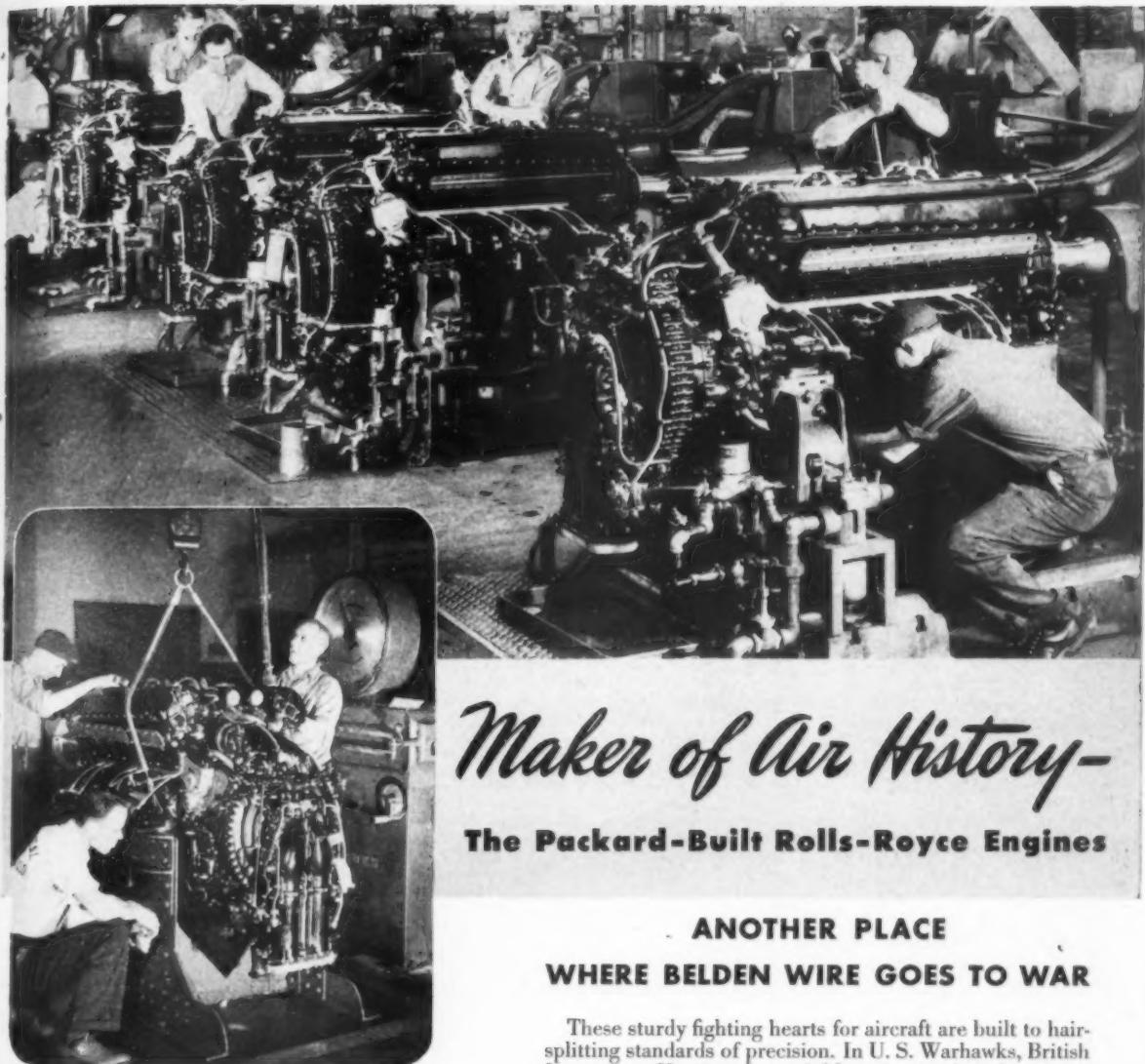
Plus
ed
son
fixed-
hamper
Industries.
Donald
Affairs
earings
outhaw
80).
resolu-
should
r cases
sts. "I
emand
ft in-
ations
battle
n it is
actual
y these
d se-
" "I
anges
st will
battle.
e ex-
the best
able to
so for
down

ices in
ype of
entives
o cor-
n cost
nalties
losses
m in-

airport
ment
sitions
hetical
ight 11
ight 3
7 ter-
extra
t 6:15.

of time
es an
there
e 4 on
d and
idle at
finally
pushed
e gate
unway
wear.
of the
ghout

ng out
ary to
ns in-
s only
d their
rt De-
ch re-
actical



Illustrations show Packard testing and weighing operations on finished Packard-built Rolls-Royce aircraft engines. Lord Beaverbrook declared that "the best production job he had ever seen was done when the Packard Motor Car Company in America produced our Rolls-Royce engine."

Photos Courtesy Packard Motor Car Company



Awarded the U. S. Treasury Special Citation of Merit for initiating the War Bond-or-Cash Dividend Plan

Maker of Air History—

The Packard-Built Rolls-Royce Engines

ANOTHER PLACE WHERE BELDEN WIRE GOES TO WAR

These sturdy fighting hearts for aircraft are built to hair-splitting standards of precision. In U. S. Warhawks, British Lancasters, Hurricanes, and Mosquitos, they have rendered amazing service in strafing and blasting across Africa and Europe—to the very doors of Berlin.

Here's another example of the way American ingenuity is defeating dictatorship. Here skilled workers are using service-tested materials in producing weapons that "stay on the job." Here's another place where Belden wire goes to war.

Back of Belden aircraft wire is a lifetime of experimenting and testing and collaboration with aircraft engineers since flying was in its infancy. This vast experience makes possible the Belden aircraft wire that meets today's needs.

Belden Manufacturing Co., 4691 W. Van Buren St.
Chicago 44, Illinois

Belden Aircraft WIRE

Starter, Lighting, and Instrument Cables ✓ ✓ ✓ SPARK PLUG WIRES

BUSINESS

Advertisers In this Issue

Company	Page
Adel Precision Products Corporation	4th Cover
Aeroproducts Division of General Motors	34-A
Aeroquip Corporation	3rd Cover
Air Express Division	
Railway Express Agency	64
Aircooled Motors Corporation	29
Aircraft Accessories Corporation	74-75
American Phenolic Corporation	76
Atlantic Rayon Corporation	88
Aviation Enterprises	37
B G Corporation	88
B-H Aircraft Company	84
Beech Aircraft Corporation	43
Belden Manufacturing Company	89
Bell Aircraft Corporation	30-B
Breeze Corporations, Inc.	54
Byrne Doors, Inc.	85
Canadian Pacific Air Lines, Inc.	12
Chance Vought Aircraft	
Division of United Aircraft Corp.	13
Cherry Rivet Company	70
Continental Air Lines, Inc.	56
Cox and Stevens Aircraft Corp.	88
Curtiss-Wright Corporation	
Airplane Division	30-A
Curtiss-Wright Corporation	
Propeller Division	12-A
Curtiss-Wright Technical Institute	11
Douglas Aircraft Company, Inc.	53
Edo Aircraft Corporation	81
Engineering & Research Corporation	68
Foot Bros. Gear and Machine Corp.	3
General Tire and Rubber Company	7
Globe Aircraft Corporation	83
Gulf Oil Corporation	77
Hayes Industries, Inc.	5
Irving Air Chute Company, Inc.	80
Jacobs Aircraft Engine Company	63
Kellogg Switchboard & Supply Co.	4
Kidde, Walter, & Company, Inc.	82
Lewis, Warner, Company	78
Lexington Hotel, Inc.	84
Liberty Motors & Engineering Co.	65
Littlefuse, Inc.	71
Logan Engineering Company	48
Macwhyre Company	87
Mallory, P. R., & Co., Inc.	61
Martin, Glenn L., Company	57
McDonnell Aircraft Corporation	2nd Cover
Northwest Airlines, Inc.	62
Pan American Airways, Inc.	33
Perfect Circle Company	14-15
Phillips Petroleum Company	8
Reynolds Metals Company	46-47
Roebling's, John A., Sons Co.	67
Ryan Aeronautical Company	26
Scott Aviation Corporation	86
Simmonds Aerocessories, Inc.	45
Standard Oil Company of New Jersey	25
United Air Lines	16
United States Rubber Company	40
Waco Aircraft Company	79
Weatherhead Company	12-B
Weems System of Navigation	59
Western Air Lines, Inc.	51
Western Electric Company, Inc.	34-B
Whiting Corporation	73
Wilcox Electric Company	39
Wittek Manufacturing Company	6

Manufacturing Briefs

THE EXTRUDED METAL DEFENSE CORP. plant at Grand Rapids, Mich., which manufactured aluminum parts for airplanes, has been ordered closed by the War Production Board. The plant, which had been in production for more than a year, employed 700 persons.

WESTINGHOUSE RESEARCH LABORATORIES is helping speed the development of more powerful electrical systems for American warplanes with "pocket-size clouds and snowstorms that would fit into your hat." Confined in a glass flask no bigger than a milk bottle, the clouds and snowstorms are manufactured by Dr. Leo J. Berberich to test the effectiveness of insulation for aircraft power systems. A thick cloud can be created in a few seconds by pouring liquid air into warm water. Then the cloud is blown into a glass test chamber through a tube. When the chamber is cooled below the freezing point, snow crystals form in the cloud and drop onto an insulation-testing apparatus in the bottom of the flask. Dr. Berberich explains.

DOUGLAS AIRCRAFT CO. announces that approximately \$500,000 has been approved for the immediate construction of three new cafeterias at its Chicago plant. Work will start April 1 and is scheduled to take 90 days.

CURTISS-WRIGHT CORP. has been authorized by the Air Transport Command to announce that three-fourths of the "lifeline" of war supplies to China consists of C-46 Commando transport planes.

GLENN L. MARTIN CO. announces that a new automatic chain conveyor system has been installed in the "horseshoe curve" of the final assembly line for B-26 Marauder medium bombers. Already it has cut in half the time required to move the line and cut from 66 to 6 the number of men required for the operation. The former operation was a combination use of manual and tractor.

WOLVERINE AVIATION CO. has discontinued its operations at the Youngstown, O. Municipal Airport and is now located at 10987 Gratiot Ave., Detroit.

Classified

HELP WANTED—Pratt & Whitney Aircraft offers excellent opportunities in the engine installation field to persons trained in aircraft or engine installations. Among our many urgent requirements are the following: Aeronautical and mechanical analytical engineers for heat rejection, fuel systems, vibration and power. Design engineers. Layout draftsmen, Checkers, Detail draftsmen, Technical illustrators, Project engineers. Test engineers (flight test), Engineering aides, Sheet metal workers, Aircraft welders, Metal workers, Assembly shop helpers, Wood workers. To arrange for an interview, please write or wire your qualifications to Sales Engineering Department, or phone 8-4811, extension 391.

PRATT & WHITNEY AIRCRAFT
East Hartford, Connecticut

All hiring shall be done in conformance with the War Manpower Stabilization Act.

AVAILABLE TO PROGRESSIVE MANAGEMENT—Engineering Executive with administrative, organizational, design, stress, and research record. Nineteen years aircraft and structural experience. Excellent war record. Seeks new opportunity offering a challenge for ingenuity and enthusiasm, definitely linked to a formulated postwar program. Interested in Airline conversion, modification, or development; or in a commercial aircraft division of a well financed parent company. Statement of release available on four weeks notice. Address Box 371, AMERICAN AVIATION, American Building, Washington 4, D. C.

Financial

DOUGLAS AIRCRAFT CO., Inc., announced that as a result of settlement of contract renegotiation for the fiscal year ended November 30, 1942, net income after tax adjustment was reduced by \$2,500,000. Net income, revised, amounted to \$8,554,620, or \$14.25 a common share, as against \$18.42 announced previously. Voluntary reduction of profit margins under cost-plus-fixed-fee contracts left only \$12,000,000 before taxes, to be returned through renegotiation. Final net profit for the 1942 fiscal after renegotiation amounted to only 1.7% of billings of \$64,781,985.

BREEZE CORPORATIONS, Inc., Newark, N. J., increased production of war units 40% in 1943. John T. Masicich, president, announced. Estimated voluntary price reductions and refunds exceeded \$9,000,000. Net profit, subject to renegotiation and after provision of \$7,113,000 for taxes, amounted to \$2,610,064 on net sales of \$45,268,029. This compares with net profit of \$1,279,583 on net sales of \$38,699,262 in 1942, after renegotiation and tax charges of \$3,309,290.

TIMM AIRCRAFT CORP., Van Nuys, Calif., reports net income for year to October 31, 1943 of \$133,424, or 18c a share, compared with \$277,933, or 36c, in previous year. Figures for both years are subject to renegotiation.

HAYES MANUFACTURING CORP., and subsidiary, Grand Rapids, Mich., reports no profit, year to September 30, 1943, after provisions for renegotiation, \$50,000 for development of postwar products, and \$1,693,404 in taxes, was \$821,145, equal to 94c a share. This compares with revised net for previous year of \$587,386, or 67c.

Incorporations

BROOKLYN AIRCRAFT JIG & FIXTURE CORP., Brooklyn, N. Y., manufacturer of airplane parts; Louis Horwitz; \$10,000.

GREYHOUND SKYWAYS, Inc., airplane, Wilmington, Del.; Scott L. Hoitsland; \$100,000.

UNIVERSAL AIRCRAFT PRODUCTS CO., Inc., New York City, aircraft of all kinds; William M. Golden, \$10,000.

NATIONAL AIRCRAFT SUPPLY CORP., Bronx, N. Y., aircraft of all kinds; William P. Thomas; \$100,000.

REED SCHOOL OF AERONAUTICS, Inc., Fulton, N. Y., aircraft of all kinds; Culkin & Amdursky, Oewego, N. Y.; 300 shares, npv.

CLARK ELECTRONICS & AVIATION CORP., New York City, aircraft of all kinds; Jack N. Oppenheim; \$500,000.

CLARK AIRCRAFT, Inc., Rockville Center, N. Y., machinery, motors, etc.; David Burton, Boston, Mass.; 500 shares, npv.

EASTERN AIRCRAFT, Inc., Norwalk, Conn.; Jean E. Velsor, Walter E. Whitton, and Anne C. Paquin; \$50,000.

JERSEY AVIATION CORP., New York City, aircraft of all kinds; Murray J. Leffort; \$20,000.

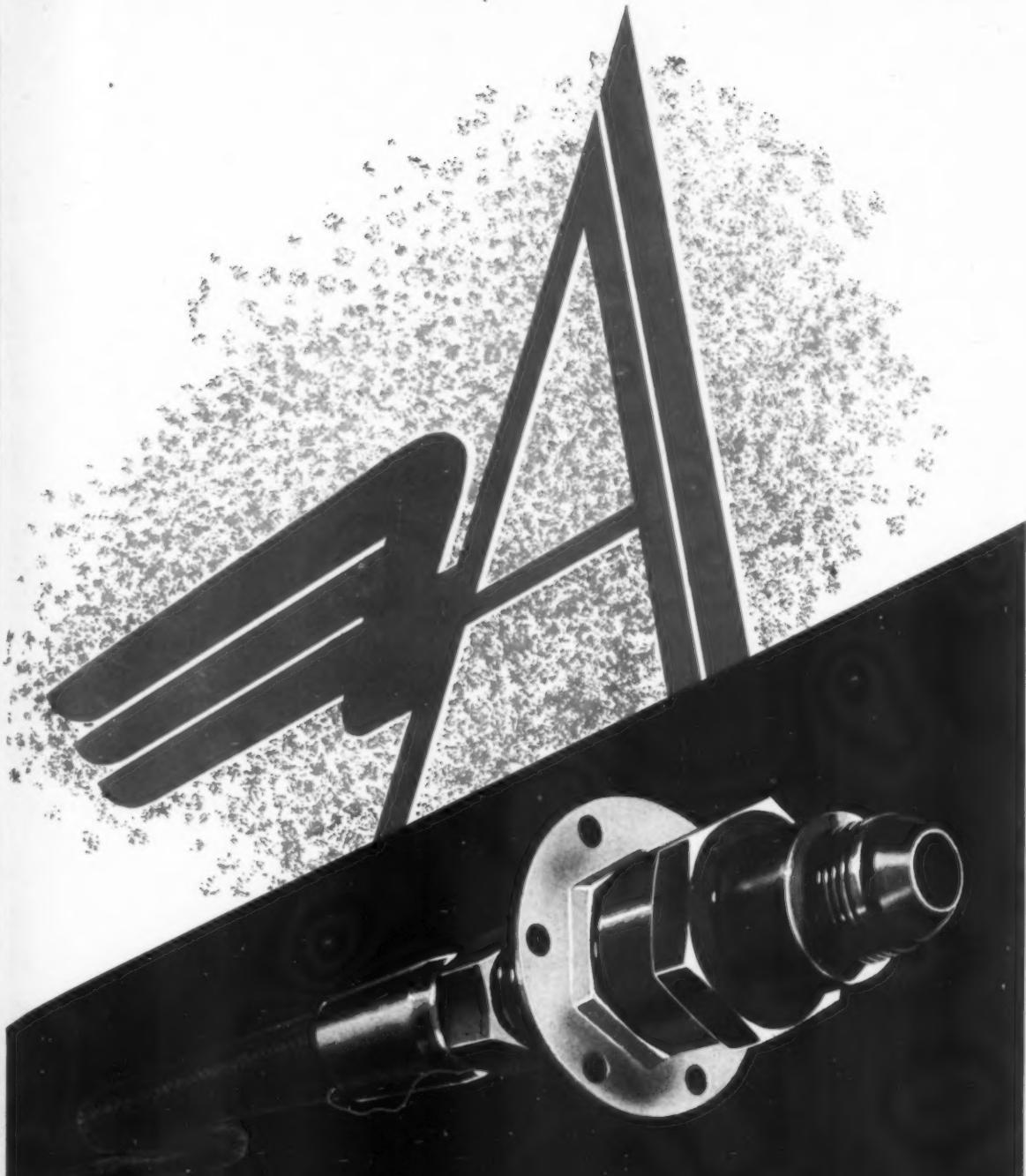
DOWNING AIRCRAFT CORP., New York City, aircraft of all kinds; Martin Ross; \$20,000.

DPC Authorizations

BORG-WARNER CORP., Detroit, for equipment at plants in Detroit at a cost of approximately \$785,000.

FAIRCHILD ENGINE & AIRPLANE CORP., Hagerstown, Md., for additional facilities at a plant in Burlington, N. C., at a cost of approximately \$30,000; overall commitment of approximately \$3,950,000.

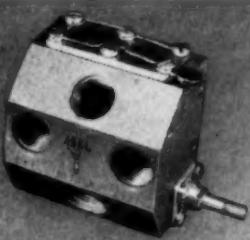
INTERSTATE AIRCRAFT & ENGINEERING CORP., El Segundo, Calif., for additional facilities at a plant in De Kalb, Ill., at a cost of approximately \$70,000; overall commitment of approximately \$1,500,000.



AEROQUIP HOSE LINES AND COUPLINGS ARE STANDARD ON ALL ARMY AND NAVY AIRCRAFT. HOSE LINES WITH DETACHABLE, RE-USABLE FITTINGS ARE QUICKLY SERVICEABLE IN THE FIELD . . . COUPLINGS CAN BE DISCONNECTED AND RE-CONNECTED WITHOUT LOSS OF FLUID OR ADMISSION OF AIR.

AEROQUIP CORPORATION
JACKSON, MICHIGAN, U. S. A.

303 WAREHAM BLDG., HAGERSTOWN, MD. - 1709 W. 8th., LOS ANGELES - PRENCO - 72 STAFFORD ST., TORONTO, ONT.



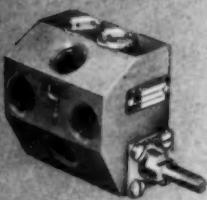
B 11009 4-WAY SELECTOR AN 6211
Big brother to the "Mighty Midget." Wt. 1.4 lb.
4 GPM cap. Max. performance, dependability.



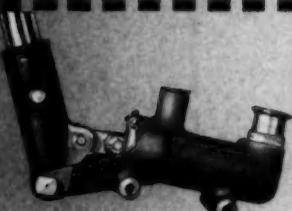
D 8818 METERING PUMP AN 6100 & 6102
Veteran of 7 years global service at all temp.
extremes. Weight 2.75 lb. Cap. 2.5—30 GPH.



B 12796 SHUTTLE VALVE AN 6209-4
Emergency unit for either hydraulic fluid or air.
Snap action, positive seal.



B 1050 4-WAY SELECTOR AN 6210
"Mighty Midget" — Weight 0.7 lb. Measures 1½ x
2½ x 2½. Left and right hand available.



B 10607 HAND PUMP AN 6201
7 fewer parts, 20% less weight. 225,000 cycle
life show no signs of detrimental wear.



B 11011 DIRECTIONAL CONTROL AN 6212
Largest in the ADEL group. Weight 4.0 lb.
Capacity 16 GPM. Corrosion resistant parts.



ADEL 800 DUAL PURPOSE LINE SUPPORTS
For moderately resilient support and protection
of lines. 3,000 types and sizes including Type
800-Z wood blocks for non-critical installations.

Standardization and **DESIGN SIMPLICITY**

Full cooperation with the Army-Navy program of Standardization has always been the goal of ADEL engineers for standardization is an integral part of the DESIGN SIMPLICITY policy on which ADEL was founded. Briefly stated, this policy means (1) Reduce to simplest terms (2) Standardize and (3) Manufacture with greatest precision.

Do these 3 things as they are done at ADEL and the result is strict interchangeability of units and components; reduced stores; minimum size, weight; maximum efficiency, performance. On this page is a partial showing of the big ADEL family of AN approved products or units meeting corresponding AN envelope requirements. Different in size, capacity and function, they have one thing in common — DESIGN SIMPLICITY.

ADEL PRECISION PRODUCTS CORP.
Burbank, Calif., Huntington, W. Va.
Service Offices: Seattle, Washington
Detroit, Michigan · Hagerstown, Md.

ADEL



ADEL BARE METAL CLAMPS

Left — AC 735 bonding clamp. Right — AC 755
loop type tube clip. Thousands of others are in
stock for immediate shipment from Burbank or
Huntington, W. Va.



ADEL BONDED AND CUSHIONED CLIPS

Left — No. 762 swivel lug type with synthetic rubber cushion. Right — No. 750 with cushion between structure and tubing. 9,000 types and sizes.